

01 Sep 2019: UPSC Exam Comprehensive News Analysis

TABLE OF CONTENTS

A. GS1 Related

GEOGRAPHY

1. [Monsoon Deficit Reduced to Near Zero](#)

B. GS2 Related

POLITY

1. [Over 19 Lakh Excluded From Final NRC](#)
2. [Election Commission to Allow Voters to Update Details on Their Own](#)

C. GS3 Related

ENVIRONMENT

1. [Investigation Ordered Into Uranium Contamination](#)
2. [Oil Spillage Fears in Chilika Lake](#)

SCIENCE AND TECHNOLOGY

1. [Filter-Based Kits Developed For TB Diagnosis, Drug-Resistance Testing](#)
2. [Cholera Bacteria Have Become Highly Drug-Resistant](#)

D. GS4 Related

E. Editorials

ENVIRONMENT

1. [A Plastic Emergency](#)

ECONOMY

1. [Economics behind e-Vehicle Batteries](#)

F. Tidbits

1. [Govt. School Students to Have Youtube Channel and Blog](#)
2. [Retrieved Antiquities on Display at Delhi's Purana Qila](#)
3. [Switzerland to Share Bank Account Information](#)
4. [Indian Companies Eye Russian Oil Fields](#)
5. [Human Factors Significantly Increases Parasite Diversity](#)

G. Prelims Facts

1. [Puri Jagannath Temple](#)
2. [Nadubhagam Chundan](#)
3. [Kamov Ka-226T](#)
4. [Build for Digital India](#)
5. [Global Linker Portal](#)
6. [Fingerprint of Earth's Atmosphere](#)
7. [Safir Satellite Rocket](#)
8. [Cooper's Ferry](#)

H. UPSC Prelims Practice Questions

I. UPSC Mains Practice Questions

A. GS1 Related

Category: GEOGRAPHY

1. Monsoon Deficit Reduced to Near Zero

Context:

- The heavy rains in August has reduced the 2019 monsoon deficit to nearly zero.

Details:

- As of August 31, India received 300 mm of rain, 16% more than the 258 mm that's typical for the month.
- In July, India received rainfall of about 4% more than what was normal for the month.
- This reduced the seasonal deficit (calculated from June 1 to July 31) from 32.8% on June 30 to 9%, on July 31.
- As of August 31, that deficit is now down to 0.2%.
- A surge of low pressure disturbances in the Bay of Bengal in July and August was responsible for the active monsoon.

El Nino effect:

- The above average monsoon activity was due to "increased activity" in the Indian Ocean.
- The El Nino activity had subsided however we were also seeing an above normal activity in the Indian Ocean.
- Unlike the Pacific Ocean, the impact of the Indian Ocean isn't as well understood.

Not a Surplus:

- In spite of the heavy rains, meteorologists say that India is unlikely to end the monsoon with surplus rain.
- Monsoon has begun to ebb from August 18 and will continue so until early September.
- India gets about 17-18 cm of rainfall in September and it is unlikely to be above average because of a slight resurgence of El Nino-like conditions.

B. GS2 Related

Category: POLITY**1. Over 19 Lakh Excluded From Final NRC****Context:**

Out of the 3.3 Cr. applicants, more than 19 lakh have been left out of Assam's final National Register of Citizens (NRC).

Details:

- The final NRC was the conclusion of a five year exercise monitored by the Supreme Court that cost ₹1,220 Cr.
- The final version of the NRC contains the names of around 3.11 Cr. of the total of 3.30 Cr. people who had applied for inclusion in the document.
- The number of exclusions has come down from the draft NRC. 41.09 lakh people were left out in the draft list published in July, 2018.
- The representatives of Gurkha community has said that more than one lakh community members have been excluded from the NRC.
- An MLA of the Assam Legislative Assembly is also among those who have been excluded.

How did they got excluded?

- The final NRC has been published after disposal of all claims and objections.

- Those who did not submit claims are also among the 19 lakh people left out.
- It was a huge exercise involving about 52,000 Assam government officials working for a prolonged period.
- Those who are assigned as D (doubtful) voters and surname mismatch cases are also excluded.
- According to the Coordinator for NRC, all decisions of inclusion and exclusion were taken by statutory officers in an objective and transparent manner.
- He added that applicants were provided adequate opportunity of being heard at every stage of the process as per statutory provisions.

Objectives behind NRC:

- Updating the NRC was aimed to filter Indians from illegal immigrants, believed to have come mostly from Bangladesh.
- There is a belief that illegal immigrants are depriving locals of rights and opportunities
- It has been a demand for almost forty years that started in 1980 during the anti-foreigners' Assam Agitation.
- In 1985, the Assam Accord ended the agitation by incorporating this demand and prescribing 1971 as the base year for detecting and deporting foreigners in the State.

What Lies Ahead for Those Who are excluded?

- Those excluded cannot technically be called foreigners as they have legal options to challenge their exclusion from the NRC.
- Each of them has 120 days to appeal before the Foreigners' Tribunals.
- The tribunals have six months to dispose of the cases.
- The appellants can thereafter approach the Gauhati High Court and the Supreme Court to establish their citizenship with proper documents.
- Otherwise they will be sent to detention camps for foreigners. There are six detention centres in Assam, and 10 more are likely to come up.
- Assam Chief Minister, opposition party and several NGOs have offered legal help to the excluded people.

Supreme Court Denies Request for Re-Verification?

- The Centre and the State government had filed affidavits in the Supreme Court demanding re-verification of 20% of the names in districts bordering Bangladesh and 10% in other districts.
- However, both requests were turned down.

Challenges:

- It is alleged that names of many Indian citizens who migrated from Bangladesh as refugees prior to 1971 have not been included in the NRC because authorities refused to accept refugee certificates.
- On the other hand allegations are also raised about manipulation of legacy data for including names in the NRC.
- Careless implementation has been alleged for disenfranchising many genuine citizens.
- There are several families whose immediate family members have been excluded despite submitting the same documents.
- Spelling errors in documents are also suspected for people being excluded.
- The validity of the tribunals as a body to adjudicate such cases is also questioned.
- Demands have been raising for an exercise similar to Assam's NRC in the Delhi to address issues such as prevention of possible terror plots to reining in street crimes, drug trafficking, enhancing women's safety, etc.

Opposition against the Final NRC:

- Most political parties and pressure groups were unhappy with the final NRC data.
- There is a possibility of attempts to create trouble either physically or through social media.
- Even after legal options are exhausted, it will not be possible to send a large number of people to detention centres.
- The All Assam Students' Union (AASU) has decided to challenge the findings of the National Register of Citizens (NRC) in the Supreme Court. They accuse that the NRC has turned out to be incomplete and error-prone.
- AASU had spearheaded the anti-foreigners Assam Agitation four decades ago and demanded an updated NRC in 1980. It was a signatory to the agitation-ending Assam Accord.
- Assam Public Works, an NGO whose petition in the Supreme Court in July 2009 led to the start of the NRC exercise four years later, also criticised the findings.

Citizenship Amendment Bill:

- The previous Lok Sabha had passed the Citizenship Amendment Bill that seeks to provide citizenship to non-Muslims from Bangladesh, Pakistan and Afghanistan who came to India before December 31, 2014.
- There were concerns in the State that the legislation would render the entire exercise futile as it would pave the way for giving citizenship to illegal Hindu migrants from Bangladesh in Assam who came after March 1971. It will be a violation of the Assam Accord as well.
- Then Home Minister had said that Assam alone should not have to bear the entire burden and the beneficiaries of Citizenship Amendment Bill can reside in any State of the country.
- The bill got lapsed along with the dissolution of the then Lok Sabha.
- Present Home Minister had said that the government would bring a Bill in Parliament to provide citizenship to "Hindus refugees" left out of the NRC.

2. Election Commission to Allow Voters to Update Details on Their Own

Context:

- The Election Commission's new initiative of Electors Verification Programme (EVP) aims to update the electoral rolls through participation from citizens.

Details:

- The initiative is first being rolled out in Delhi after which it will be undertaken across the country.
- Citizens will have to make an account on the online portal and check the data available and verify the same.
- They can update and verify details in order to remove "logical errors" like multiple entries and missing names among others.
- One can tag family members in the same account to verify and update the respective data.
- Both online and offline modes are available for voters to participate in the EVP.
- In the offline mode, citizens can approach the voters' centres available in each Assembly constituency or visit the CSCs (Common Service Centres).
- Simultaneous verification will be done by block level officers (BLO) as well.

Objective:

- The programme is aimed at empowering voters by checking data themselves and authenticating the same.

- With the Assembly polls in Delhi due soon, the programme is an opportunity for voters to check the available data, verify it themselves and to ensure that the corrections are made.

C. GS3 Related

Category: ENVIRONMENT

1. Investigation Ordered Into Uranium Contamination

Context:

- The Andhra Pradesh government has ordered a full-fledged inquiry into a number of complaints about groundwater pollution caused by the uranium mining and processing.

Details:

- The inquiry is issued against a project of the Uranium Corporation of India Limited (UCIL) at Tummalapalle in Kadapa district.
- The state government asked the Andhra Pradesh Pollution Control Board (APPCB) to set up a committee of experts which would visit the tailings pond where the wastage from the UCIL facility is stored.
- The committee would comprise scientists and senior officials of the National Geophysical Research Institute, the Atomic Energy Regulatory Board, the Mines and Geology, Groundwater and Agriculture Departments of the State government and the IIT-Tirupati as members.

Uranium Contamination:

- There were apprehensions among the people living in the vicinity of the project site over the release of slurry into the tailings pond.
- The uranium concentration in the groundwater was 4,000 ppb (parts per billion) against the Atomic Energy Regulatory Board (AERB) permissible limit of 60 ppb.
- There is a steep rise in the levels of sodium and other heavy metals in the groundwater at Tummalapalle and its surrounding areas.
- Residents of six to seven villages around the site have been complaining of contamination of groundwater since the mining of ore and processing began.
- There were reports of people falling ill and damage to crops.
- Earlier, scientists have found widespread uranium contamination in groundwater from aquifers across 16 states in India, much above the WHO standard.

How did the Contamination Happen?

- The UCIL was not complying with the norms for protecting the tailings pond from seepage.
- The APPCB had asked the UCIL to line the pond with a polyethylene layer.
- However, the UCIL lined the pond with clay material with desired thickness as per the Atomic Energy Regulatory Board guidelines.

Effects of Uranium:

- Uptake of large amounts of uranium, a radioactive substance, can cause health effects such as kidney disease or may develop cancer.
- Uranium also impacts ground water quality.

2. Oil Spillage Fears in Chilika Lake

Context:

- With the pumping out of oil from the Malaysian tug, fears of oil spillage in the Chilika lake appears to have diminished.

Details:

- Earlier, the Malaysian tug Jin Hwa 32 was grounded in the vicinity of the lake after drifting away in a storm.
- It was on its way from Mongla Port in Bangladesh to Visakhapatnam.
- The representatives of the vessel in Visakhapatnam hope that it will be ready to be towed to the city shortly.

Fears of Oil Spillage:

- Fearing oil spillage, Odisha government, the Chilika Development Authority, the Department of Forest and Environment and the Odisha Pollution Control Board had directed the vessel owners to immediately remove 30,000 litres of diesel, 2,000 litres of hydraulic oil and 1,000 litres of lube oil.
- Oil spillage can lead to the deterioration of the lake ecosystem.

Chilika Lake:

- Chilika Lake is the largest brackish water lagoon in India.
- In 1981, Chilika Lake was designated the first Indian wetland of international importance under the Ramsar Convention.
- In 1993, the lake was put under the 'Montreux Record', a register of wetland sites on the List of Ramsar wetlands of international importance where changes in ecological character have occurred, are occurring, or are likely to occur as a result of technological developments, pollution or other human interference.
- In 2002, Chilika was taken out of the Montreux Record because of the improved conditions of the lake.
- The lake has also been listed in UNESCO World Heritage tentative list.

Category: SCIENCE AND TECHNOLOGY

1. Filter-Based Kits Developed For TB Diagnosis, Drug-Resistance Testing

Context:

A multi-institutional team has developed three cost-effective kits that improve the diagnosis of drug-resistant TB.

Details:

- The three kits are TB Detect, TB Concentration & Transport, and TB DNA Extraction.
- The TB Detect kit is for diagnosis using LED fluorescence microscopy.
- The TB Concentration & Transport, and the TB DNA Extraction kits together are for detection of drug-resistance.
- The team includes researchers from the Department of Biotechnology at AIIMS and the Advanced

Benefits:

- The TB Detect kit helps increase the positivity of LED fluorescence microscopy by about 5%.
- The TB DNA Extraction kit allows the detection of drug-resistant TB bacteria with a high level of sensitivity.
- The kits are not expensive. The TB Detect kit currently costs Rs.100 per sample, Rs.100 for the TB transport kit and Rs.85 for the DNA extraction kit.
- Diagnosis of drug-resistant TB is carried out only at central laboratories, and so samples have to be transported.
- The TB concentration & transport kit now makes it easy and simple to transport samples, transport it in sealed covers at ambient temperature making containment at low temperature redundant. This is because the bacteria are killed using a disinfectant.
- The developed kits are to be evaluated for operational feasibility and performance in field settings under Revised National Tuberculosis Control Program (RNTCP).

2. Cholera Bacteria Have Become Highly Drug-Resistant

Context:

- A study of diarrhoea patients from two sites, Kolkata and Delhi reveals how extensively the Cholera bacteria have developed resistance against most routinely used antibiotics.

Details:

- The highest resistance (99.8%) was seen against the antibiotic sulfamethaxazole, whereas resistance to neomycin was the least, with only 4% showing resistance.
- Isolates collected from Kolkata showed relatively less resistance than isolates collected from Delhi.
- This might probably because the Kolkata isolates were collected between 2008 and 2013, while the Delhi samples were collected during 2014-2015.
- The team sequenced the whole genome of the bacteria isolated during 1980, 2000s, 2014 and 2015.
- In 1980, fewer antibiotics were used and resistance was minimal.
- With increasing usage of different antibiotics, the resistance against them has also increased.
- By 2014-2015 the bacteria have become extensively drug resistant (XDR) to all commonly used antibiotics.

Cholera:

- Cholera is an infectious disease that causes severe watery diarrhoea, which can lead to dehydration and even death if untreated.
- It is caused by eating food or drinking water contaminated with a bacterium called *Vibrio cholerae*.
- The occurrence of this disease in India is very rare (less than 100 thousand cases per year).
- However, the World Health Organization (WHO) has in the past warned that cholera can rear its head in India like it used to do in the past.

D. GS4 Related

Nothing here for today!!!

E. Editorials

Category: ENVIRONMENT

1. A Plastic Emergency

Context:

- Before a **ban on single-use plastic** items comes into force, it is crucial to formulate a protocol that will identify the functional roles of different stakeholders.

A Movement to Eliminate Single-Use Plastic

- The government is said to be working on a ban on certain plastic items of common use under the **Environment (Protection) Act**. This may be announced on Gandhi Jayanti.
- Such items include carry bags, cutlery and plates.
- Earlier, the deadline for the ban was
- In his Independence Day address, Prime Minister Narendra Modi called for a **movement** to eliminate single-use plastic in India, beginning on Gandhi Jayanti (October 2).
- All the stakeholders have their own functional role in the movement:
- **Individuals and organisations** need to actively remove plastic waste from their surroundings.
- **Municipal bodies** must make arrangements to collect these articles.
- **Start-ups and industries** should think of newer ways of recycling.

Plastic Waste Management (PWM) Rules:

- The Plastic Waste Management (PWM) Rules were notified in **2016**.
- An amendment to the PWM Rules in **2018** mandates a **six-month deadline** for **producers** to arrange for **recovery of waste**.
- They are supposed to carry out this in partnership with **State Urban Development**

Alternatives to Plastic:

- **Compostable, biodegradable or even edible plastics** made from various materials such as **bagasse** (the residue after extracting juice from sugarcane), **corn starch**, and **grain flour**.
- Compostable cups and plates made of **Polylactic acid** require industrial composters. Polylactic acid is derived from biomass such as corn starch.
- Some biodegradable packaging materials require **specific microorganisms** to be broken down.
- In **Britain**, articles made through a different process involving **potato and corn starch** have done better in normal conditions.
- **Seaweed** is also emerging as a choice to make edible containers.

Challenges:

- Most **cities and towns are not prepared** to implement the provisions of PWM Rules.
- Recently, the **Central Pollution Control Board (CPCB)** issued notices to 52 companies asking them to file their plan to fulfil their **EPR (extended producer responsibility)**
- Even the biggest **Municipal Corporations** with a huge waste burden have failed to implement **segregation of waste**.
- Segregation of waste means collecting **recyclable plastic, non-recyclable plastic and other waste** separately for processing by material recovery facilities.
- There is also criticism of **under-reporting** of the true extent of plastic waste.

- Most often, plastic is not marked with **numerical symbols** to facilitate recycling using the correct industrial process. Ex.: **1 for PET, 4 for Low Density Polyethylene, 5 for Polypropylene**,
- There are concerns regarding the **viability** (in terms of scale and cost) of **alternative to plastic** such as compostable or biodegradable plastics.
- In the absence of robust testing and certification to verify claims made by producers, **spurious biodegradable and compostable plastics** are entering the markets.
- Recently, the **CPCB** said that 12 companies were marketing carry bags and products marked 'compostable' without any **certification**. It also asked the respective State Pollution Control Boards to take action on these units.
- Consumers often have **no choice** in the matter of food packaging used by manufacturers.

Threats in Future:

- According to the Federation of Indian Chambers of Commerce and Industry (FICCI), **per capita consumption** of plastic is projected to go up from **11 kg in 2014-15 to 20 kg by 2022**.
- About **43%** of it will be constituted by **single-use packaging** with poor rates of recovery.
- **Packaging industry** is also projected to grow into a **\$72.6 billion** industry in India **by 2020** from about \$31 billion in 2015.
- There will be a proportionate rise in waste volumes which will increase the pressure on producers to streamline the collection, recycling and processing of all forms of plastic.

Way Forward:

- After reducing the volume, non-recyclables must be **disposed** of using methods such as **co-processing in cement kilns, plasma pyrolysis or land-filling**.
- It is required to **prioritise** the reduction of single-use plastic such as multi-layer packaging, bread bags, food wrap, and protective packaging.
- A **comprehensive mechanism** need to be laid down to **certify the materials** marketed as alternatives, and the specific process required to biodegrade or compost them.
- City municipal authorities need to undertake rigorous **segregation** of waste and scaled up recycling.
- The campaign must focus on tested biodegradable and compostable **alternatives** for plates, cutlery and cups.
- The packaging industry must take its **extended producer responsibility** requirements under the law seriously. The industry should also look at innovation and new materials.

Category: ECONOMY

1. Economics behind e-Vehicle Batteries

Context:

There are concerns regarding the **economic feasibility** of electric vehicles (EVs) for mass use, as India is seeking a transition from conventional fuel vehicles to EVs.

Transition to EVs:

- Recently, the **NITI Aayog** proposed to ban the sale of all internal combustion engine (ICE) powered **three-wheeler** post **March 2023**.
- It also suggested that all new **two-wheelers** below 150cc sold after **March 2025** should be electric.
- The **Union Budget** announced **tax incentives** for early adopters of EVs.

India's Position on EV adoption:

- India's mobility market is driven more by **two wheelers** and hence EV adoption will be driven by two-wheelers rather than cars.
- According to the NITI Aayog, **79%** of vehicles on Indian roads are **two-wheelers**.
- **Three-wheelers and cars** that cost less than ₹10 lakh account for **4% and 12%** of the vehicles respectively.
- The overall cost for **two wheeler** EVs is comparatively lesser since only **smaller batteries** are needed when compared to cars.

How to Make EVs Environment Friendly?

- In conventional ICEs, petrol or diesel fuels the engine.
- In EVs, electrons supplied by the battery fuel the vehicle and the battery itself is not the fuel.
- The battery is a device that stores electrons/energy which is sourced from electricity.
- **EV charging infrastructure** needs to be powered through **renewable sources** to make it truly sustainable.
- Presently, most of India's electricity is generated using **conventional sources**.
- In 2018-19, over 90% of India's electricity was generated from conventional sources such as coal.
- Only around 10% was produced from renewable sources such as solar, wind and biomass.

Concerns of the Industry:

- The **automobile industry** had objected to the proposal of NITI Aayog and called for a practical approach in framing electric vehicle-related policies.
- There has been concerns that EVs are still not **financially viable** because of various costs associated with their manufacture and use.

Cost of the EVs:

- The portion of the costs of the **drivetrain** of EVs is 4% lower when compared to ICE vehicles.
- The drivetrain is the system in a motor vehicle which connects the transmission to the drive axles.
- This is primarily due to less parts in the electric drivetrain.
- However, the **battery pack** takes up nearly half the cost of an electric vehicle.
- The predominant battery chemistry used in EVs is **lithium-ion batteries** (Li-ion).
- No new technologies are available for immediate commercial usage.
- The cost of key-components of the battery (the cathode, anode, electrolyte, separator, etc.) contribute almost **60% to the total cost**.
- The rest is contributed by **labour charges**, overheads and profit margins.
- At present, cells are **imported** and "**assembled**" in India into batteries. It increases cost.
- Setting up a Li-ion manufacturing unit requires high **capital expenditure**.

Decreasing Price of Battery Packs:

- The price of these battery packs has consistently fallen over the past few years.
- **Technological improvements**, economies of **scale** and increased **demand** for lithium-ion batteries are the factors responsible for the decline in price.
- Fierce **competition** between major manufacturers has also brought down the price.
- It is not clear if the battery cost can be reduced even further since the raw material cost makes up the major part of price.

Way Forward:

- The cost of **battery packs** needs to be reduced significantly for any meaningful reduction in the price of EVs.
- Any reduction in the cost of the battery pack will have to come from a reduction in materials cost or the manufacturing overhead since labour cost is comparatively lesser.
- India needs to **manufacture Li-ion cells** in-house. Battery manufacturing in India is expected to grow as electric vehicles grow.
- More focus needs to be given for electricity generation from **renewable sources**.

F. Tidbits

1. Govt. School Students to Have Youtube Channel and Blog

- Students of the Government Upper Primary School at Koothattukulam in Kerala are set to blog and also post videos on YouTube.
- ‘e-kids’, an IT club has already been formed at the school.
- Funds are being mobilised at the local community level for the school’s IT infrastructure.
- The blog will in due course be turned into a creative space for students to express themselves. The idea is to post at least one blog by a class in a week.
- Apart from classroom activities, the YouTube channel will be a platform for students to exhibit their artistic talents and document their academic activities.
- The students are being trained by teachers who have received IT training under the Kerala Infrastructure and Technology for Education (KITE), a State government establishment.
- This initial batch of students will be converted into trainers to cover the entire 860 students in the school in a phased manner.

2. Retrieved Antiquities on Display at Delhi’s Purana Qila

- A collection of antiques that have been retrieved and confiscated over the years went on display at the Purana Qila complex at the new gallery set up by the Archaeological Survey of India.
- The gallery houses 195 antiques that range from the proto-historic to the modern period and include stone and metal sculptures, coins, paintings, ivory and copper artefacts.
- A total of nine antiquities at the gallery have been retrieved from other countries.
- Among the exhibits is a standing image of Sridevi from the Chola dynasty period that was seized by the United States' Homeland Security from a smuggler Subhash Kapoor and returned to India.
- A standing Buddha returned by the Metropolitan Museum of Art in New York in 1999.
- A marble sculpture of Brahma-Brahmani that was stolen from the open-air museum at Rani-ki-Vav in Gujarat in 2001 and recovered from the UK in 2012 are also on display.
- The gallery is a part of the central antiquity collection at the Purana Qila, a fort built during the period of Sher Shah Sur (1540-1545).

3. Switzerland to Share Bank Account Information

- Banking details of Indians with accounts in Switzerland will be available to tax authorities, as the automatic exchange of information regime kicks off between the two countries.
- The move is a significant step in the government’s fight against black money.
- It is anticipated that the era of “Swiss bank secrecy” will finally be over.
- India will receive information of the calendar year 2018 in respect of all financial accounts held by Indian residents in Switzerland.
- Details for accounts closed in 2018 will also be available.

4. Indian Companies Eye Russian Oil Fields

- A consortium of Indian oil firms is in talks to buy a significant stake in the eastern cluster oil fields in Russia with investments running into billions of dollars.
- A deal is likely to be announced at the Eastern Economic Forum and the Annual Bilateral Summit between Prime Minister Narendra Modi and Russian President Vladimir Putin in Vladivostok next week.
- Minister for Petroleum and Natural Gas and Minister of Steel Dharmendra Pradhan is already in Russia with a delegation of Indian oil firms for exploring partnerships with Russian firms.
- Indian energy companies have so far invested close to \$10 billion in acquiring stakes in hydrocarbon assets in Russia.

5. Human Factors Significantly Increases Parasite Diversity

- A new research has now pointed out that by changing the land use patterns and introducing livestock in their ecosystem humans are indirectly increasing the parasite diversity in their gastrointestinal system.
- The team looked at over 4,000 mammalian faecal samples collected from 19 forest fragments at the Anamalai Hills of the Western Ghats.
- These parasites can cause a broad range of infectious diseases and it is important to study the host-parasite interactions at a community level.
- Herbivores such as deer may find the human settlements as a source of regular food and also as a safe zone where carnivores don't enter. This could also be a reason for pathogen spillover from livestock to wildlife.
- When the land use changes; coffee plantation to tea plantation or when degraded forests are converted to a coffee estate, the internal niche is affected.
- Many epidemic diseases including the Ebola virus started finding humans as a better new host when their natural habitats were disrupted.

G. Prelims Facts

1. Puri Jagannath Temple

- The Shree Jagannath Temple of Puri is an important Hindu temple, belonging to the Vaishnava tradition, situated in the state of Odisha.
- The temple is famous for its annual Ratha yatra (chariot festival).
- The temple was built by the Ganga dynasty king Chodaganga in the 12th century A.D.
- In the 9th century A.D., Sankaracharya visited Puri and founded the Govardhana Matha as the eastern dhama of India.
- Sankaracharya had founded four Mathas across India, known as dhama which literally means, a sacred place.
- Puri is the dhama of eastern India. The other dhamas are: Sharada Peetham (Sringeri, Karnataka), Dwaraka (Gujarat), and Jyotir Math (Uttarakhand).
- The mathas were to be led by men who would be known as 'Shankaracharyas'.
- As suggested by the Odisha government, the demolition of structures within 75-metre radius of the temple, including the 12th century Emar Mutt, for security reasons.
- 'Shankaracharya' of Puri Swami Nischalananda Saraswati said that the Odisha government's decision was made without consulting him.

2. Nadubhagam Chundan

- Nadubhagam Chundan, a snakeboat, lifted its second-ever Nehru Trophy or the maiden race of the inaugural edition of the Champions Boat League (CBL).
- It was also the first winner of the famed Nehru Trophy boat race.

- First Prime Minister Jawaharlal Nehru donated a replica of a snakeboat as a silver trophy for the annual Nehru trophy event held in the Punnamada Lake, Kerala.
- A total of 79 boats, including 23 snakeboats, participated in the Nehru Trophy.
- Hosted by Kerala Tourism, CBL is the country's first-ever boat race on the lines of IPL.
- There will be 12 races in the CBL beginning with the Nehru Trophy and concluding with President's Trophy Boat Race in Kollam.

3. Kamov Ka-226T

- The Kamov Ka-226 (Hoodlum) is a small, twin-engined Russian utility helicopter.
- It features an interchangeable mission pod, rather than a conventional cabin, allowing the use of various accommodation or equipment configurations.
- Russia will showcase two of its Kamov Ka-226T helicopters to Prime Minister Narendra Modi at the Eastern Economic Forum (EEF) at Vladivostok in Russia.
- Russia had started setting up a manufacturing line in anticipation of the final contract with India.
- A special alloy of aluminium with special additives would be used for the manufacture.

4. Build for Digital India

- Google had signed a statement of intent with the Ministry of Electronics and IT for rolling out 'Build for Digital India' programme.
- The programme will offer a platform to engineering students to develop technology-based solutions that tackle key social issues.
- Students will take part in online and offline learning opportunities on key technologies.

5. Global Linker Portal

- The Global Linker portal is a Facebook-like platform that connects small firms globally.
- It is a dedicated portal for small and medium enterprises (SMEs) where such entities can network with peers and potential customers while marketing their products and services.
- A user will be able to find posts from entities that he is connected with, his network of connections, notifications related to his posts, likes and comments, etc.
- Global Linker currently has more than 2.65 lakh SMEs registered on its platform. These SMEs come from 154 different countries across the globe.
- There are more than 100 offers on products and services offered by member SMEs.
- Companies from various sectors have even formed subgroups to have very focussed engagements.

6. Fingerprint of Earth's Atmosphere

- Astronomers at Canada's McGill University have made a "fingerprint" for the Earth.
- It could be used to identify a potentially life sustaining planet beyond the solar system.
- Researchers have constructed a transit spectrum of Earth using observations of the Earth's atmosphere taken by the SCISAT satellite.
- The findings can help in determining 'biosignatures' that astronomers need to look out for in order to find Earth-like planets outside solar system.

7. Safir Satellite Rocket

- Iran's Safir satellite rocket is suspected to have exploded on the launch pad at the Semnan Space Center in northern Iran.
- Iran was believed to have been planning a third attempt to loft a satellite into space, after two launches in January and February failed to place satellites in orbit.
- U.S. President Donald Trump on Friday released a photograph of an apparently failed Iranian rocket

launch and said that the U.S. had nothing to do with it.

- Iran has made no official comment on the indications from aerial photos of a rocket explosion.

8. Cooper's Ferry

- At the Cooper' ferry in the U.S., artefacts including stone tools and animal bone fragments dating back about 16,600 years were found.
- The find represents what may be the oldest evidence of humans in the Americas and offer insight into the routes people took as they spread into the New World.
- Scientists used radiocarbon dating to determine the age of artefacts unearthed at Cooper's Ferry along the Salmon River.
- It is concluded that people were present there at a time when large expanses of North America were covered by massive ice sheets, and big mammals such as mammoths, mastodons, sabre-toothed cats, the giant short-faced bear, horses, bison and camels roamed the continent's Ice Age landscape.

H. Practice Questions for UPSC Prelims Exam

Q1. Consider the following statements with reference to cholera:

1. Cholera bacteria have developed resistance against most routinely used antibiotics.
2. Cholera is caused by eating food or drinking water contaminated with a bacterium called Vibrio cholera.

Which of the statement/s is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Ans: c

Explanation:

Both the statements are correct.

Q2. Which of the following statements describes the 'Build for Digital India' programme?

- a) It is a programme for educating government servants about the techniques in e-Governance.
- b) It is a scheme for building more Common Service Centres (CSCs) across rural India.
- c) It is a scholarship programme for school children who have interest towards innovations in computer science.
- d) It is a platform for engineering students to develop technology-based solutions for key social issues.

Ans: d

Explanation:

Google had signed a statement of intent with the Ministry of Electronics and IT for rolling out 'Build for Digital India' programme. The programme will offer a platform for engineering students to develop technology-based solutions that tackle key social issues. Consider the following statements

Q3. with reference to the Electors Verification Programme (EVP) introduced by the Election Commission:

1. Through EVP, voters can update and verify details in the electoral roll in order to remove logical

- errors like multiple entries and missing names among others.
- Both online and offline modes are available for voters to participate in the EVP.
 - A voter will not be able to tag his/her family members in the same EVP account to verify and update the respective data.

Which of the statement/s is/are correct?

- 1 only
- 1 and 3 only
- 1 and 2 only
- 1, 2 and 3 only

Ans: c

Explanation:

A voter can tag family members in the same EVP account to verify and update the respective data.

Q4. Which of the following does NOT belong to the four 'mathas' founded by Sankaracharya across India?

- Dwaraka
- Puri
- Kanyakumari
- Sringeri

Ans: c

Explanation:

The four 'mathas' founded by Shankaracharya are: Puri (Odisha), Sharada Peetham (Sringeri, Karnataka), Dwaraka (Gujarat), and Jyotir Math (Uttarakhand).

I. UPSC Mains Practise Questions

- Do you agree with the opinion that immigrants are often found depriving locals of their rights and opportunities? Suggest measures for establishing a harmonious relationship between immigrants and locals. (250 words, 15 marks)
- In India, industry and infrastructure related makeover is a prerequisite for the adoption of electric vehicles. Discuss. (250 words, 15 marks)

