Current Affairs – Weekly (5-12 September, 2019)

UPSC IAS Prelims – 2020

Civil Services Preliminary Exam- 2020

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Legislative Action & Behavioural Change
Mains -GS2- Polity, Mains -GS1- Society
In the recent past, many legislative actions have been initiated to change the behavior of the nation.

Which are such laws?
1. Striking down of Article 377 of the Indian Penal Code (IPC) to change society’s attitude towards the LGBTQ+ community.
2. Passing of the triple talaq bill to change the status of Muslim women in this country.
3. The abrogation of Article 370 to make Kashmiris emotionally closer to India.
4. Increase in fines under the amended Motor Vehicles Act, 2019, to change the driving behavior.

How effective are legislative actions in changing behavior?
1. There are many instances when legislative action has been a failure in changing the behavior of a nation such as,
   a. Attempts to make citizens stop drinking alcohol by introducing prohibition have failed across the world, from the US to the Indian states of Gujarat and Kerala.
   b. When a law tried to curb alcohol consumption, underground markets started to spur, creating bigger problems for the state.
   c. Several laws have been passed in the US to end racial discrimination, but it has not ended the discrimination.
2. There are also cases where legislation has created fundamental changes in social behavior. Such as Health warnings images used to curtail smoking and ban of smoking in public places.

Why is there a difference in its effectiveness?
Some laws are effective while most of them do not make much of an impact.
1. It is not easy for any legislative action to curtail this pleasure-seeking behavior initiated by the brain’s dopamine release system.
2. Despite the combined effort of all organized religions and governments for thousands of years, harmful behaviour continues unabated.
3. Cognitive (thinking, reasoning, or remembering) biases tend to create a tendency or prejudice toward or against something or someone.
4. Many of the biases are implicit and escape conscious detection. So, it is almost impossible for legislation to erase deep-rooted biases about race, gender, ethnicity, etc.
5. In such cases legislation alone will not be enough to create equality for women, especially when it comes to issues involving religion.
6. Several other behavioural interventions will have to be introduced in organizations and society to achieve positive change.

**What needs to be done to change social norms?**
1. Interventions beyond legislation are required.
2. For example, the positive transformation of attitudes towards gay rights in the US was because of one’s understanding that someone within one’s family or friends’ circle may have this sexual orientation.
3. Research has shown that people who got acquainted with at least one gay person were more likely to change their minds and become more accepting of gay and lesbian people in general.
4. Similarly, the solution to the Kashmir problem lies in the government’s ability to get ordinary Kashmiris to interact with others outside their state.

**When can legislative action succeed?**
1. Legislation has a higher chance of success when it is trying to manage public behavior.
2. This wider impact of an individual’s action on the larger society can be used as a valid excuse to instill more responsibility in the individual’s action. The success of the ban on public smoking can be attributed to this.
3. Driving is an activity that is done in a public space. Most driving-related violations of rules are not the result of any deep-rooted brain processes.
4. So the attempt of the government to mitigate such behaviour through a drastic increase in fines has a high chance of success, provided it is implemented well.

5. Humans tend to make judgments on whether to engage in a prohibited activity based on the expected cost of that behaviour.

6. If the severity and probability of punishment exceed the expected benefit or pleasure of the act, then the individual will refrain from that behaviour.

7. With stricter traffic policing, the likelihood of getting caught and punished goes up as well. In all, the loss caused by stiff fines is likely to leave a deep imprint on the memory of the offender. This will surely deter future offences.

8. This particular legislation has another benefit too. The very sight of all two-wheeler riders on the road wearing helmets will form a vivid image of India taking an important step towards becoming a more law-abiding society.

9. This will have a cascading impact on other spheres of society too. India has a golden opportunity to initiate broad behavioural changes across the country, which must not be missed.

Renewable Energy Push in India

Mains - GS3 - Environment

The government has proposed Ultra Mega Renewable Energy Power Parks (UMREPP) of 2,000 megawatts (MW) each.

About UMREPP

1. It is expected to help developers achieve economies of scale and further bring down solar and wind power tariffs.

2. The central government is pushing state-run companies to build clean energy parks at a cost of around $2 billion each, with built-in incentives to ensure states and operators are invested in the parks.

3. These green energy parks will be set up under the existing Solar Park scheme, which provides the land and grid connectivity and will be implemented by a special purpose vehicle (SPV).
4. To get states on board and facilitate the requisite clearances, state governments will be paid ₹ 0.02 per unit of electricity generated from the projects over their lifetime.
5. The state governments will facilitate the SPV to identify and acquire land and obtain required statutory clearances.
6. The capacity of the UMREPP may be in the range of 2,000MW to 250MW. For floating solar PV (Photovoltaics) parks, the minimum size should be 50MW.

**Need for such parks**

1. Setting up such parks will bolster India’s image as a clean energy champion at the time of climate change.
2. India is aiming to secure its energy needs by cutting down imports of fossil fuels and reduce pollution.
3. Also, major global companies such as Tesla are showing interest to build large factories of lithium-ion batteries of a 50-gigawatt hour (GWh) with an investment of about ₹50,000 crore.
4. The government wants to make India a global manufacturing hub for electric vehicles and their components.

**Climate Commitments**

1. India has become one of the top renewable energy producers globally, with ambitious capacity expansion plans to achieve 175GW by 2022 and 500GW by 2030, as part of its climate commitments.
2. At present, around 22%, or 80,000MW, is generated through clean energy projects.

**Investment in Green Energy**

1. India is seeking additional clean energy investment of around $80 billion till 2022, and up to $250 billion during 2023-30.
2. Investments in the country’s renewable energy sector doubled over the last five years to around $20 billion in 2018, surpassing the capital expenditure in the thermal power sector.
3. It is regarded as a turning point for India’s green economy.
Differential Global Carbon Tax
Mains -GS3- Environment
1. Climate change is a global problem; therefore, it needs a global solution.
2. The most recent Intergovernmental Panel on Climate Change (IPCC) report suggests that total global emissions will need to fall by 45% from 2010 levels by 2030 and reach net zero by 2050.
3. If these targets are not met, tropical regions of the world, which are densely populated and happen to be mainly concentrated in the global South, are likely to be most negatively affected because of their low altitudes and pre-existing high temperatures.

Sharing the burden
1. The global south, which has historically contributed less to climate change face the negative effects of the lifestyle choices made by the global North.
2. A just approach involves a global sharing of the responsibility among countries according to their respective shares in global emissions.
3. Just Energy Transition (JET) is a new approach that is premised on a sense of global justice in terms of climatic fallouts and the respective contributions of the countries.

Just Energy Transition (JET) – New Approach
1. The first priority is to change the energy infrastructure, which requires massive investments for the green energy programme across the world.
2. According to the JET approach those on the top of the funnel, apart from funding their own energy transition, partially support the transition for the countries at the bottom and this sharing of the burden of development be done in a way which inverts this injustice funnel.
3. For a successful energy transition to greener renewable sources, countries have to spend around 1.5% of their GDP.
4. Global energy transition will be financed through a system of the global carbon tax.
5. Those countries which emit more than the global per capita average pay for their own transition plus fund a part of the energy transition of those who are below this average.
6. Currently, the global average of carbon emissions is 4.97 metric tonne per capita.
7. All the countries with emissions above this level (68 in all) are “payers” to finance energy transition for ‘beneficiary’ countries (135 in number), which are emitting below this level.
8. The total amount of “carbon compensation” made by the payer nations comes to around $570 billion.
9. The distribution of this fund across them is also based on their distance from the global average; on how lower their emissions are in comparison to the global average.

**Top Payers and Receivers**

1. The two top ‘payer’ countries in terms of absolute amounts of transfers are the U.S. and China since their emissions are higher than the global average.
2. However, the effective tax rate for the Chinese is lower than the possible universal tax rate of $46.1 per metric tonne, because of their own energy transition (1.5% of China’s GDP), they make $34.4.
3. In terms of ‘compensated’ countries, India comes at the top due to its population size and its distance from the global emissions’ average (India has per capita emissions of 1.73 metric tonne).
4. Few countries such as France, Sweden, and Switzerland would also receive compensation because currently, they have less per capita emissions than the global average.

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**Zero Budget Natural Farming**

Prelims – Economy, Mains -GS3- Environment

1. National Academy of Agricultural Sciences (NAAS) has stated that Zero Budget Natural Farming (ZBNF), is an “unproven” technology bringing no incremental value gain to either farmers or consumers.
2. The Indian Council for Agriculture Research (ICAR) committee on ZBNF also reports that nothing conclusive has emerged, but meeting crop nutrient demand through this technique is an issue.
3. Recently, at Conference of Parties to the UN Convention to Combat Desertification India mentioned its focus on ZBNF to ensure soil health.
4. Union Budget also referred to ZBNF as an innovative idea in doubling farmers’ income.
About Zero Budget Natural Farming

1. ZBNF’s basic concept is that over 98 per cent of the nutrients required by crops for photosynthesis – carbon dioxide, nitrogen, water and solar energy – are already supplied “free” from the air, rains and sun.

2. Only the remaining 1.5-2 per cent nutrients need to be taken from the soil and converted from “non-available” to “available” form (for intake by the roots) through the action of microorganisms.

3. To enable the microorganisms to do this, farmers must apply ‘Jiwamrita’ (microbial culture) and ‘Bijamrita’ (seed treatment solution).

4. ‘Mulching’ (covering plants with a layer of dried straw or fallen leaves) and ‘Waaphasa’ (giving water outside the plant’s canopy) to maintain the right soil temperature-moisture-air balance.

5. For insect and pest management, ZBNF recommends the use of ‘Agniastra’, ‘Brahmastra’ and ‘Neemastra’, which, like ‘Jiwamrita’ and ‘Bijamrita’, are concoctions based mainly on urine and dung from local cows.

6. Since these also do not have to be purchased, it makes farming practically “zero-budget”.

Critics of ZBNF

1. The plant growth and crop yields require nitrogen, which is also a major component of amino acids that are the building blocks of proteins.

2. About 78 per cent of air is nitrogen, but it is not freely available to plants. Being non-reactive, atmospheric nitrogen has to be fixed into a plant-useable form such as ammonia or urea.

3. ZBNF is effective only if dung and urine from black-coloured Kapila cows are used and farmers sow traditional varieties/landraces.

Rainfall and Crude Oil Prices

Prelims – Economy, Mains -GS3- Economic Development
The surplus monsoon and low crude oil prices could take the economy back to a high growth path.

Why are crude prices low?
1. Crude oil prices have remained low despite the efforts of certain OPEC countries to increase the price.
2. This is due to
   a) The weakening growth forecast for most economies of the world and
   b) Global shift in automobiles from fossil fuel-based power towards renewables like electric, solar and wind.
3. The US, which used to be a net crude importer is now a net exporter.

What is the progress of the monsoon?
1. Monsoon rainfall started from a deficit of 35% at the end of June. Now rains across India are 3% above normal.
2. But, it has led to floods in agriculturally important states like Punjab, Maharashtra, Tamil Nadu, Kerala and Andhra Pradesh. This could affect the sowing of crops.
3. The spatial and temporal distribution has remained uneven, with states such as Haryana, Uttar Pradesh, Bihar, Jharkhand and West Bengal facing deficient rainfall.
How could the two benefit the economy?
1. A healthy monsoon will lead to good crop production, benefiting farmers. This directly helps consumer companies and other industries.
2. Similarly, low crude oil prices will save the country foreign exchange and help farmers and companies control their energy spend.

Which are the other issues impacting the economy?
1. Lack of private investments over the past few years, subdued demand and trade tensions and large imports of electronics from China are hurting the Indian economy.
2. Government spending on unproductive social welfare schemes continues to be high.
3. India’s banking and NBFC sector is still reeling under high NPAs.
4. Government reversed some of its unpopular tax measures, but market sentiment has not revived.
5. Important sectors like auto and energy are undergoing structural changes, hurting jobs and growth.
Genomic Grid for India
Prelims – Science and Technology
Recently, the government had planned to set up a National Genomic Grid.

National Genomic Grid
1. The grid was set up with the purpose
   a) To enhance cancer research in India and make treatment viable for people of different economic classes.
   b) To study genomic data of cancer patients by collecting samples from cancer patients to study genomic factors influencing cancer and identifying the right treatment modalities for the Indian population.
2. The grid to be formed will be in line with the National Cancer Tissue Biobank (NCTB) set up at the Indian Institute of Technology, Madras.
3. The grid will have four parts, with the country divided into east, west, north and south.

Other Progress
1. The government is on a mission to achieve the target of one doctor for every 1,000 people, a standard ratio set by the WHO, by 2022, against the current ratio of 1/1,400.
2. The government plans to increase the number of MBBS seats in the country from 42,000 to one lakh.

Bombay Blood Group
Prelims – Science and Technology
Recently, the demand for “Bombay blood group”, a rare blood type has spiked but supply has been scarce.

Blood Types
1. The four most common blood groups are A, B, AB and O. The rare, Bombay blood group was first discovered in Mumbai (then Bombay) in 1952.
2. Each red blood cell has antigen over its surface, which helps determine which group it belongs to.

3. The Bombay blood group, also called hh, is deficient in expressing antigen H, meaning the RBC has no antigen H.

4. For instance, in the AB blood group, both antigens A and B are found. A will have A antigens; B will have B antigens. In hh, there are no A or B antigens.

5. Globally, the hh blood type has an incidence of one in four million. It has a higher incidence in South Asia. In India, one in 7,600 to 10,000 are born with this type.

**Testing for the group**

1. To test for hh blood, an Antigen H blood test is required. Often the hh blood group is confused with the O group. The difference is that the O group has Antigen H, while the hh group does not.

2. Lacking Antigen H, should not be related to poor immunity or more proneness to diseases.

3. Their counts for haemoglobin, platelets, white blood cells and red blood cells are similar to the count of others based on their health index. Because of rarity, they do face problems during a blood transfusion.

**Transfusion limitations**

1. The individuals with Bombay blood group can only be transfused autologous blood or blood from individuals of Bombay hh phenotype only.

2. In contrast, hh blood group can donate their blood to ABO blood types.

**India's Unequal University system**

Mains -GS2- Social Justice

Recently, All India Survey of Higher Education (AISHE) 2018-19 was published. It provides insight on the representation of marginalized and female in Higher education.

What does the study reveal?
1. Overall there are no substantial differences in what scheduled caste and forward caste students study, with some exceptions.
2. However, the enrolment of SC and ST students fell short of the mandated quota of 15% and 7.5% respectively.
3. As of 2011, SCs and STs formed 16.6 and 8.6 percent of the Indian population respectively.

**Where are quotas applicable?**
1. Quotas are applicable to state-run institutions, and to a limited extent to privately run institutions.
2. Most technical education private colleges provide reservations under state laws, but they aren’t comprehensive and there isn’t a binding central law.

**Which are the issues faced by the Dalit students?**
1. Dalit students at IITs have reported facing caste-based discrimination and record poorer academic performances than their forward caste peers even after controlling for socio-economic backgrounds.
2. Dalit respondents to job advertisements were less likely to be called up than upper-caste respondents with the same qualifications.

**Why access to higher education matters?**
1. Access to education matters for historically marginalized castes as it can change their job prospects and give them a real chance to climb up the socio-economic ladder.
2. However, education alone does not fully level the playing field for marginalized groups.

**How are women represented?**
1. The AISHE data indicates that Women are breaking major barriers in higher education at a historic pace.
2. The number of female students enrolling in higher education in many fields has exceeded that of male students.
3. However, some fields of study are intensely gender-segregated. For example, enrolment in auxiliary nursing is 99% female, while enrolment in hotel management courses is over 80% male.

4. The enrolment of females in prestigious universities such as IITs and AIMS is on par with males.

**Chandrayaan-2**

Prelims – Science and Technology, Mains -GS3- Technology

India’s first attempt to land a spacecraft on the Moon has not been successful.

2. While the orbiter part is functioning normally, ISRO lost contact with the lander.
3. Most of the scientific investigations of the mission are supposed to be carried by instruments onboard the orbiter, including studies to find more evidence of water on the Moon.
4. The lander and rover had a mission life of only 14 days while the orbiter will function for at least one year.
5. About 80-90 per cent of the science output of the mission has to come from the orbiter, and that has not been affected at all.

What is the status of the lander?
1. The lander, Vikram, did not slow down at the expected rate towards the latter part of its descent, and most likely hit the lunar surface at a speed greater than required for safe landing.
2. The ground control station lost contact with the lander when it was about 2.1 km above the Moon.
3. Vikram had been located on the Moon, and a thermal image of it had been taken by instruments on board the Chandrayaan-2 orbiter that is going around the Moon in a near-circular orbit of 100 km.
4. But efforts to re-establish contact with the lander had not yet been successful.

**Why Vikram couldn’t make a soft landing on the moon?**
1. The contact was lost, when it was travelling at 50 to 60 metres per second (180 to 200 km per hour).
2. It was decelerating, but not fast enough to slow down to a speed of 2 metres/second (7.2 km/hr) that was required for a safe landing.
3. Vikram was designed to absorb the shock of an impact even at 5 metres/second (18 km/hr). At the rate it was decelerating, it could not attain speed less than 5 metres/second.
4. It is likely to have hit the Moon at a far greater speed, possibly damaging itself and instruments on board.

**When contact could be restored?**
1. The lander has already been located. At the time it had begun to deviate from its pre-programmed flight path, the lander was barely a few kilometres from the Moon.
2. The difficult part is to restore contact with the lander. That would depend on how much damage it has suffered, and whether its communication unit is intact.
3. The individual instruments onboard the lander and several of its components are capable of sending signals that can be picked up either through other nearby space assets or by the ground station.
4. Every such signal will offer valuable clues to its current state and what it could have gone through.

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5. Restoration of contact can be done only in the next two weeks. After that, the Moon will enter its night (14 Earth days) during which temperatures would be so cold that the instruments are unlikely to behave normally.

Which instrument has been used in the lander for communication?
1. NASA-built Laser Retro reflector Array, essentially only a group of mirrors. This was only meant to be deployed on the Moon.
2. These mirrors are used by control stations on the ground to reflect signals from the Moon. At least five such reflectors are already on the Moon, deployed by earlier missions.
3. They are used for a variety of purposes. It is by sending signals back and forth to these mirrors that the distance between the Earth and the Moon has been calculated to a very high degree of precision.
4. All these existing retro reflectors are in the equatorial region of the Moon. The one being carried by Vikram lander would have been deployed near the polar region for the first time.
5. If this instrument has not been totally destroyed, it can be used. It is supposed to be a “passive” instrument; it only has to act as a reflector of signals.
6. The rover could have come out of the lander only when it was standing vertically. Now it is unlikely that the rover and the two instruments on it could be put to any use now.

How big a setback this is to ISRO?
1. ISRO, and other space agencies as well, has gone through several such setbacks in space exploration.
2. It is most probably a good learning experience. Even Chandrayaan-1, launched in 2008, had suffered a partial failure due to problems in heat shielding.
3. It had a mission life of two years but remained functional for nine months. However, the main science objectives of Chandrayaan-1 had already been achieved by that time. This included the most important finding of irrefutable evidence of the presence of water on the Moon.
4. Similarly, the major objective of Chandrayaan 2 is also expected to be achieved.
Ration Card Portability
Mains -GS3- Economic Development
The central government has scheduled June 2020 for the rollout of the ‘One Nation One Ration Card’ scheme.

What is the scheme about?
1. India runs the world’s largest food security programme, distributing subsidized food grain to beneficiaries every year through a vast network of fair price shops.
2. Under the National Food Security Act (NFSA), each beneficiary is eligible for subsidized grains every month.
3. This is a location-linked benefit where each beneficiary is linked to a specific fair price shop and can only buy rations in that particular shop. So, Migrant workers get left out of the food safety net.
4. Over the last few years, 10 States have implemented the Integrated Management of Public Distribution System, which allows beneficiaries to buy rations from any fair price shop within that State.
5. The Centre is now in the process of expanding these efforts into a nationwide portability network which is called the ‘One Nation One Ration Card’ scheme.

Who will gain the most out of this scheme?
1. The main beneficiaries of the scheme are the country’s migrant workers.
2. According to the Census 2011, there are more than 45 crore internal migrants in India, of whom more than half have not completed primary education, while 80% have not completed secondary education.
3. Lower levels of education are linked to lower-income, which would make a large percentage of these migrants eligible for NFSA benefits.
4. Registering for ration cards at their new location is an arduous process, especially if some members of the household still remain in their original home.
5. About 1/5th of migrants are short-term migrants, and women who change locations after marriage also find it difficult to start accessing ration benefits using a new household’s card.

6. It is also expected to curb corruption, improve access and service quality by removing monopolies.

7. Under the old system, beneficiaries were dependent on a single fair price shop and subject to the whims of its dealer, which can be addressed by the new scheme.

8. The scheme is also driving the faster implementation of initiatives to digitize and integrate the food storage and public distribution system.

**How does it work?**

1. The scheme involves the creation of a central repository of NFSA beneficiaries and ration cards, which will integrate the existing databases maintained by States, Union Territories, and the Centre.

2. Aadhaar seeding is also important as the unique biometric ID will be used to authenticate and track the usage of ration by beneficiaries anywhere in the country. (Currently, around 85% of ration cards are linked to Aadhaar)

3. For the scheme to work, all fair price shops must be equipped with electronic point-of-sale machines (ePoS), replacing the old method of manual record-keeping.

4. The Food Corporation of India’s Depot Online System is integrating all warehouses and godowns storing subsidized grain in an attempt to create a seamless flow of online information from procurement until distribution.

**Which states have started the process?**

1. Two pairs of States — Andhra Pradesh-Telangana and Maharashtra-Gujarat — became the first to begin implementing portability between their States.

2. Another two more pairs — Kerala-Karnataka and Rajasthan-Haryana — will join the experiment.

3. All these eight States and at least three other states that have already implemented intra-State portability will form the first national grid for the ‘One Nation One Ration Card’ scheme.
Which are the challenges in this?

1. ePoS machines have not been installed yet in many shops. Much of Northeast India and three States: Bihar (15% coverage), West Bengal (70% coverage) and Uttarakhand lag behind in ePoS installation.

2. These are also states for major sources for migration. In some rural and remote areas, ePoS connectivity also remains erratic, jeopardizing smooth functioning.

3. In other States, the challenge comes from the difference between ration benefits offered by the State in comparison to the Central entitlement.

5. For example, Tamil Nadu offers 20 kg of free rice per month along with subsidised sugar, pulses and oil, over and above the NFSA benefits.

6. The State government will not be offering these benefits to migrant workers, as the Centre will cover the costs of NFSA benefits only.

7. The scheme permits only the purchase of half the subsidized grain at one time in an effort to prevent one member of the household taking the entire ration for the month. This would affect if members of a single family are split in two different locations.

8. The biggest challenge is the lack of concrete data on inter-State migration trends, especially short-term migration.

9. The allocation of food grains to States will have to be dynamic to allow for quick additional delivery to cover any shortfalls in States with large migrant populations.

Local Governments

Mains - GS2 - Governance

1. The 73rd and 74th constitutional amendments established and devolved powers and responsibilities to elected local governments and made them accountable to the people.

2. But local governments remain ineffective and become agents of the higher-level governments.

Ground report
1. Devolution, envisioned by the Constitution implies a precisely defined governance function that is formally assigned by law to local governments, backed by adequate transfer of financial grants and tax handles, with necessary staff to carry out their responsibilities.

2. Also, local governments are to report primarily to their voters, and not to the higher-level departments.

3. But the Constitution mandates States to devolve functions and responsibilities to local government through law.

4. Given diverse habitation patterns, political and social history, only States can assign functions to local governments.

5. A study for the Fourteenth Finance Commission by the Centre for Policy Research shows that all States have formally devolved powers with respect to five core functions of water supply, sanitation, roads and communication, streetlight provision and the management of community assets to the gram panchayats.

Key issues

1. The constraint lies in the design of funding streams that transfer money to local governments such as,
   a. Inadequate funds to meet their basic requirements.
   b. Inflexible funds – Fund grants mandated by the Union and State Finance Commissions, is constrained through the imposition of several conditions.
   c. Little investment in enabling and strengthening local governments to raise their own taxes and user charges.

2. The staff are hired by higher-level departments and placed with local governments on deputation. They do not feel responsible for the latter and function as part of a vertically integrated departmental system.

3. States often postponed the elections.

4. In Tamil Nadu, panchayat elections have not been held for over two years now, resulting in the State losing finance commission grants from the Union government.

Downside of centralization
1. Successive Union governments have announced local involvement in a host of centrally designed programs, but this does not constitute devolution.

2. The current Union government has further centralized service delivery by using technology, and panchayats are used as front offices for several Union government programs.

3. Union programme design for cities is contrary to decentralization. For example, the ‘Smart City’ programme does not devolve its funds to the municipalities.

4. States have been forced to constitute ‘special purpose vehicles’ so that funds aren’t utilized by the municipalities.

**On corruption**

1. Local governments are alleged to more corruptive.

2. Criminal elements and contractors win elections through bribing voters and striking deals with different groups.

3. Higher officers posted at the behest of Members of Legislative Assemblies, often on payment of bribes, extract bribes from local governments for plan clearances, approving estimates and payments.

4. A market chain of corruption operates, involving a partnership between elected representatives and officials at all levels but there is no evidence to show that corruption has increased due to decentralisation.

5. Decentralised corruption tends to get exposed faster than national or State-level corruption. People perceive higher corruption at the local level because it is more visible.

**Way Forward**

1. To curb these tendencies gram sabhas and wards committees in urban areas have to be revitalised. Consultations with the gram sabha could be organised through smaller discussions where everybody can really participate.

2. New systems of Short Message Services or social media groups could be used for facilitating discussions between members of the gram sabha.
3. Local government organisational structures have to be strengthened. Panchayats are burdened with a huge amount of work that other departments thrust on them, without being compensated for the extra administrative costs.

4. Local governments must be enabled to hold State departments accountable and to provide quality, corruption-free service to them, through service-level agreements.

5. Local governments are reluctant to collect property taxes and user charges fully to woe voters. Higher tax collection leads to a higher accountability.

6. It is easy to keep track on of corrupt local government representatives than at higher levels, therefore, the citizens must demand the strengthening of local governments from higher-level governments.

Indus Valley Civilization

Prelims – History, Mains -GS1- History of India

1. Rakhigarhi Project has been conducted that sequenced the first genome of an individual from Harappa.

2. According to the study, the hunter-gatherers of South Asia, who then became a settled people, have an independent origin.

3. The theory of the Harappans having Steppe pastoral or ancient Iranian farmer ancestry thus stands refuted. The finding also negates the hypothesis about mass migration during Harappan times from outside South Asia.

4. They do not contain a genome from either the Steppe region or ancient Iranian farmers. The genetic continuity from hunter-gatherer to modern times is visible in the DNA results.

5. The same hunter-gatherer communities developed into agricultural communities and formed the Harappan civilisation.

6. The researchers also suggest that there was a movement of people from east to west as the Harappan people’s presence is evident at sites like Gonur in Turkmenistan and Sahr-i-Sokhta in Iran.

7. The Harappans traded with Mesopotamia, Egypt, the Persian Gulf and almost all across South Asia, there was bound to be movement of people resulting in a mixed genetic history.
8. India had a heterogeneous population right from the beginning of settled life, according to which settled life and domestication went from South Asia to West Asia, not the other way around.

**Origins of farming**

1. In Europe, ancient-DNA studies have shown that agriculture tended to spread through an influx of people with ancestry in Anatolia, in modern-day Turkey.
2. The new study shows a similar dynamic in Iran and Turan (southern Central Asia), where the researchers found that Anatolian-related ancestry and farming arrived around the same time.
3. But in South Asia, the farming was not due to the movement of people from the farming cultures of the west but that local foragers adopted it.

**Lightning Across India**

Prelims – Geography, Mains -GS3- Disaster Management

1. Lightning strikes have caused at least 1,311 deaths in the four months in 2019.
2. For the first time, a report on lightning incidents in India has been prepared.

**Who prepared this report?**

It has been prepared by the Climate Resilient Observing Systems Promotion Council (CROPC), a non-profit organization that works closely with the India Meteorological Department (IMD).

**What has the report found?**

1. It counted 65.55 lakh lightning strikes in India during this four-month period.
2. Of these, 36 percent are cloud-to-ground lightning, which reaches the Earth’s surface.
3. Remaining 64 percent were in-cloud lightning, which remains confined to the clouds in which it was formed.

**Why are these findings important?**
1. Findings help to create a database to develop an early warning system for lightning, spread awareness, and prevent deaths.
2. Around 2,000 to 2,500 people are killed every year in lightning strikes besides the loss of livestock and damage to property.
3. It is possible to predict, 30-40 minutes in advance, when a lightning strike heads towards Earth, through study and monitoring of the in-cloud lightning strikes.
4. Timely dissemination of this information can save several lives.
5. The IMD has begun providing lightning forecasts and warnings through mobile text messages from 2019 for selected regions.
6. However, there isn’t enough awareness on the kinds of action that need to be taken after an alert.

**When is lightning formed?**
1. Lightning is a very rapid and massive discharge of electricity in the atmosphere. Some of it is directed towards the Earth.
2. The lightning-generating clouds are typically about 10-12 km in height, with their base about 1-2 km from the Earth’s surface. The temperatures at the top range from -35°C to -45°C.

**The Process**

**How does a lightning strike Earth?**
1. Earth is a good conductor of electricity. Earth is relatively positively charged compared to the middle layer of the cloud.
2. As a result, around 20-25 percent of the current flow gets directed towards the Earth. It is this current flow that results in damage to life and property.
3. Lightning has a greater probability of striking raised objects on the ground, such as trees or buildings.
4. Once they are near the ground, about 80-100 m from the surface, they even tend to redirect their course to hit the taller objects.
4. This is because traveling through the air, which is a bad conductor of electricity, the electrons try to find a better conductor and also the shortest route to the relatively positively charged Earth’s surface.

As water vapour moves upwards in the cloud, it condenses into water due to decreasing temperatures. A huge amount of heat is generated in the process, pushing the water molecules further up.

As they move to temperatures below zero, droplets change into small ice crystals. As they continue upwards, they gather mass, until they become so heavy that they start descending.

It leads to a system where smaller ice crystals move upwards while larger ones come down. The resulting collisions trigger release of electrons, in a process very similar to the generation of electric sparks.

The moving free electrons cause more collisions and more electrons; a chain reaction is formed.

The process results in a situation in which the top layer of the cloud gets positively charged while the middle layer is negatively charged.

The electrical potential difference between the two layers is huge, of the order of billions of volts. In little time, a huge current starts to flow between the layers.

It produces heat, leading to the heating of the air column between the two layers of cloud.

It is because of this heat that the air column looks red during lightning. The heated air column expands and produces shock waves that result in thunder sounds.

Thousands of thunderstorms occur over India every year. One thunderstorm can involve more than 100 lightning strikes.

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Civil Services
Mains -GS4- Integrity
1. Questions are being raised on abuse and misuse of civil services.
2. Organizations such as the Enforcement Directorate and the Central Bureau of Investigation are being used by the political parties in power.
3. Tax officials are said to deliberately hound the businesses and the media which differ with the government.

Role of Civil Services
1. Civil services are seen as a tool to attain a just, fair, equitable and prosperous society.
2. It facilitates a common man to better his life and the future of his children.
3. Unlike politicians, the common man does not think of using the services for his selfish ends but for the common good.

Condition of the Civil Services
1. Civil servant trainees are imparted knowledge and skill in subjects specific to the job profile of each service from state-of-the-art and well-equipped training academies.
2. But the spirit of the civil services such as the impartiality and incorruptibility of administration that Sardar Patel expected, is being deteriorated.
3. Civil service, the backbone of administration is unable to withstand the pressures of expediency, politicians, media, and mob.

Lack of Support
1. There are awards for innovation and achieving targets, but none for the officer standing by the principles he/she is supposed to be true to.
2. Case studies have been developed for performance, but none exist for those who abide by their commitment to a just and equitable society and dare to differ with “orders from the top”.

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3. Politicians of all political parties identified the holes in the civil services and take advantage of it. If this continues, the bureaucracy would be made to serve the politicians, not the society.
4. The provision of lateral entry is considered to further tamper with the civil services.

Certain Exceptions
1. A commissioner of police, when asked not to oppose the bail of a film star who was the son of a Mumbai politician, refused to comply, politely but firmly.
2. A young IAS officer refused to write the interview marks of candidates appearing for a teachers’ interview in pencil so the politicians on the board could “manipulate” them later.
3. A tax officer refused to open a closed file of the business house to be misused by the government.
4. Justice H R Khanna refused to abrogate the fundamental rights during the Emergency period.
However, these “principled stands” are known only to a few.

Way Forward
1. The civil servants should be left to perform their specific role earnestly and the culture of performance, accountability has to be encouraged and the corrupt must be punished.
2. Civil servants must take a principled stand and resist undue pressures from different players and concentrate on the delivery of services to the poor.

National Animal Disease Control Programme
Prelims – Economy, Prelims – Science and Technology
1. Government is set to launch the National Animal Disease Control Programme for Foot and Mouth Disease and Brucellosis.
2. National Animal Disease Control Programme for Foot and Mouth Disease and Brucellosis is a 100% centrally funded program, with a total outlay of Rs.12,652 crore from 2019 to 2024.
3. It aims to control Foot and Mouth Disease and Brucellosis by 2025 with vaccination and eventual eradication by 2030.

Foot and Mouth Disease
1. Foot-and-mouth disease (FMD) is a severe, highly contagious viral disease of cattle and swine. It also affects sheep, goats, deer, and other animals.
2. It is caused by a virus of which there are seven ‘types’, each producing the same symptoms, and distinguishable only in the laboratory.
3. Animals pick up the virus either by direct contact with an infected animal or by contact with foodstuffs or other things which have been contaminated by such an animal, or by eating or coming into contact with some part of an infected carcase.
4. Vaccination can be used to reduce the spread of FMD or protect specific animals.

Brucellosis
1. Brucellosis is an infectious disease that occurs from contact with animals carrying Brucella bacteria.
2. It can infect cattle, goats, camels, dogs, and pigs. The bacteria can spread to humans when contacted with infected meat or the placenta of infected animals, consumption of unpasteurized milk or cheese.
3. It is highly contagious and spreads easily between cattle as the calf, the membranes and the uterine fluids all contain large quantities of bacteria.
4. In some areas, wild populations of buffalo, bison or cattle can carry the disease and infect domestic animals if they come into contact.
5. Vaccination is not a guarantee but can increase resistance to infection.
**General Studies of Rajasthan-All in One**

राजस्थान सामान्य अध्ययन:नोट्स एवं अभ्यास 1000+प्रश्नोत्तर

**Geography of Rajasthan**

**History of Rajasthan**

**Polity and Administration of Rajasthan**

**Art and Culture of Rajasthan**

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Thank you!!