17 March 2019 Comprehensive News Analysis

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GS1 Related

ART AND CULTURE

1. Quieter, greener homage to Belur saint

What's in the news?

- In a bid to conserve environment, the Ramakrishna Math and Ramakrishna Mission will break an age-old tradition this year, 2019 and do away with the practice of having a fireworks display as part of the birth anniversary celebrations of Sri Ramakrishna.
- The fireworks display is usually held on the last day of the celebrations, which falls on March 17 this year (2019).
- "In the interest of environment protection, it has been decided to do way with the fireworks display this year," general secretary Swami Suviranananda had said from the Math headquarters at Belur.

A Grand Public event:

- The birth anniversary programme of the 19th century saint Ramakrishna is marked by a pre-dawn arati, Vedic chanting and a homa (invocation of gods with offerings before a fire).
- Traditionally, it culminates with a public event on a Sunday with a fireworks display in the evening on the adjacent banks of the Hooghly river.
- Spread over 40 acres on the west bank of the river, the Math complex, with its architecturally distinct temples and landscaped gardens, attracts devotees and tourists alike from all over the country and beyond, as well as the residents of Howrah, a congested industrial district across Kolkata.
- The nearly hour-long, fireworks show draws hundreds to the Math.
- Sources surmise that the tradition of the fireworks display may have been started by Swami Vivekananda, who founded the Order over a hundred years ago.
- The decision to do away with the fireworks, taken by the 21-member Board of Trustees of the Ramakrishna Math, will be reviewed later even as there were discussions on having a more environment-friendly laser show instead.
- For the first time this year (2019), the anniversary celebrations included folk theatre or jatra and a performance of chau — a masked dance form from West Bengal's Purulia district.
- The Ramakrishna Mission's decision comes in the backdrop of the National Green Tribunal (NGT)'s imposition of a fine of ₹5 crore on the West Bengal government for failing to take steps to improve the air quality of Kolkata and Howrah.

GS2 Related
INTERNATIONAL RELATIONS

1. 'Czech Republic wants to have strategic partnership with India'

India-Czech Relations: A Brief Historical Background

- India's trade and cultural relations with Czech Republic have a long history.
- In the medieval ages the Kingdom of Bohemia (now a part of Czech Republic) traded with India.
- There are records stating that precious goods including Indian spices were brought to Czechoslovakia from east through marine and land routes as early as 9th and 10th centuries.
- During the Austro-Hungarian Empire, the Charles University in Prague, the second oldest university in Central Europe, had many Sanskrit scholars.
- India's relations with the former Czechoslovakia, and with the Czech Republic, have always been warm and friendly.
- Gurudev Rabindranath Tagore visited Czechoslovakia in 1921 and 1926.
- A bust of Tagore is installed in an exclusive residential area in Prague named after Tagore.
- The Indian leader, who visited Czechoslovakia the most times between 1933 and1938 was Netaji Subhash Chandra Bose.
- He founded the Indo-Czech Association in Prague in 1934 and met Edvard Benes several times as Foreign Minister and President.
- Pandit Jawaharlal Nehru accompanied by his daughter Indira Gandhi visited Prague in 1938, and subsequently influenced the strong condemnation of the 1938 Munich Pact by the Indian nationalist movement.
- Diplomatic relations with Czechoslovakia were established on November 18, 1947. Former Indian Presidents Dr. S. Radhakrishnan, Giani Zail Singh and R. Venkataraman visited Czechoslovakia in 1965, 1983 and 1988 respectively.
- Prime Minister Pandit Jawaharlal Nehru paid a visit in 1955, as did PM Smt. Indira Gandhi in August 1972 and Rajiv Gandhi in August 1986.

What's in the news?

- Czech Republic and India have strong bilateral and economic ties and both countries want to elevate it to the next level, Czech Ambassador in New Delhi Milan Hovorka has said.
- "We have already proved our capacity to be a trustful partner to help India build its industrial capacity, especially in the power generation and defence sectors. We have

advanced the idea of elevating our bilateral partnership. We have agreed to start discussions at the end of which we could come to an agreement that we can elevate it to the level of strategic partnership," Mr. Hovorka said in a recent interview.

A Look at Specifics:

- The envoy, who was in Chennai to open an honorary consulate of Czech Republic in the city, said there are several issues in common for both countries. "We have both been supporters of multilateralism. We definitely are in favour of multilateral solutions, and we strongly reject unilateral actions."
- He added that Czech Republic and India are on the same page on UN reforms. "We are united and we support India's cause to become a member of the Security Council. We would at the same time like to see the interests of small and medium countries to be reflected in this reform... We are one of the supporters of India's case to become a full-fledged member of the Nuclear Suppliers Group," he said.
- He said bilateral trade between the two countries is strong and both India and Czech Republic offer investment opportunities for each other. "Bilateral trade is now $1.6 billion out of which $870 million is imports from India. So, we provide very good business and investment opportunities for Indians and they are doing extremely well."
- In the defence sector, according to the Ambassador, both countries have already established strong ties. "You may know Tatra trucks, which has been providing high quality service to Indian armed forces for decades... We do have different kind of surveillance systems. We do have first class radars. Most of Indian airports use radars originating from the Czech Republic."
- "Recently Bengaluru hosted Aero India show. During the show, one of the Czech companies, PBS, signed a contract and opened an Indian office, and the objective is to produce aircraft engines here in India. Czech Republic is one of the few countries which have the capacity to design and produce aircraft of different types, including supersonics," Mr. Hovorka said.
- Honorary Consul Ar. Rm. Arun said his priorities would be on strengthening business-to-business ties between Czech Republic and Tamil Nadu and Pondicherry. "Right now we have only one Czech investment here which is focussed on engineering service industry. But certainly there are a number of things that Tamil Nadu and Pondicherry have to offer," he said, identifying energy, health care and tourism as potential areas where opportunities could be explored.

2. Indians to get more time to find work in U.K.

What's in the news?

- Indians and other international students to the U.K. will have a longer time to find work after completing their undergraduate or postgraduate degree, under changes announced by the British government.

Context:

- The changes fall short of the two-year post-study work visa that many have been campaigning for but are regarded as a step in the right direction.
- Undergraduate and postgraduate students will now have six months within which they can find work, whereas doctoral students will have a year after their degree.
- They will also be able to apply for a skilled work visa three months before the end of their course, or move to skilled work for two years after graduation if they return to their home country.
- This is part of a package of measures to boost foreign student numbers to around 6,00,000 by 2030, from 4,60,000 in 2017-2018.

'Below potential':

- Some experts have opined that "U.K. education is punching above its weight, but below its potential,"
- Consequent to this development, Sector body Universities UK said it welcomes the changes but would continue to press the government to "go further and extend this opportunity to at least two years".
- Jo Johnson, the former Universities Minister who resigned over the direction of Brexit negotiations, warned that the U.K. needed to allow "at least two years post study (as other countries do) to be competitive". "The U.K. is rapidly losing market share in international students."
- Earlier in the month of March 2019, it emerged that India had once again not been included in an expanded list of countries from which students applying for visas would be subject to less-stringent documentation requirements.
- While the number of Indian students coming to the U.K. rose sharply in the year 2018, it was still well below past levels, and far below the number of Chinese students.
- Further, while in the past, Britain has sought to attribute the fall in Indian students to a decade-old shake-up of the system to stamp out the problem of bogus colleges, India considers the problems far more complex, revolving in particular around what the U.K. has to offer students, compared to other countries like Germany, Australia and Canada.
- There have also been concerns around the processes involved in applying. The

strategy document said the government would continue to review "the processes for conducting interviews" to ensure they were "appropriately focussed, and minimised inconvenience for applicants".

GS3 Related

ENVIRONMENT AND ECOLOGY

1. UN meet dilutes Indian plan to phase out single-use plastics

What's in the news?

- An ambitious resolution piloted by India to phase out single-use plastics by 2025, was watered down at the United Nations Environment Assembly (UNEA) that concluded on 15th March, 2019 in Nairobi.

Background:

- It is important to note that at the World Environment Day summit on June 5, 2018, Union Environment Minister Harsh Vardhan, in the presence of Prime Minister Narendra Modi, had pledged to eliminate single-use plastics from India by 2022.
- As a matter of fact, this was lauded by then UN Environment Chief, Erik Solheim.
- This development had also pushed several States — notably Maharashtra, Tamil Nadu and Himachal Pradesh — to enforce previous commitments to ban plastic bags and similar disposables.

Analysis:

- Further, ahead of the UNEA, the UN secretariat had invited inputs from member states to forge a common declaration regarding addressing a host of environmental challenges. India's inputs on the February 16, 2019 read:

"…We will decisively address the damage to our ecosystems caused by the unsustainable use and disposal of single-use plastic products, including by phasing-out most problematic single-use plastic products as early as 2025, and we encourage the private sector to find affordable and eco-friendly alternatives…"

- However, the final declaration on March 15, 2019 removed the firm timelines and edited out the "decisively" and only committed to a "reduction by 2030."

"…We will address the damage to our ecosystems caused by the unsustainable use and disposal of plastic products, including by significantly reducing single-use plastic products by 2030, and we will work with the private sector to find affordable and environment friendly alternatives…" says the document available on the UNEA website.

- The UNEA, however, lauded India for playing a key role in advocating a time-bound ban on single use plastic.
- According to a source, India didn't work enough to garner international support to carry it all the way through. It is believed that India "didn't have enough subject experts at Nairobi", the source added.

Nitrogen pollution

- Along with plastic, India also piloted a resolution on curbing nitrogen pollution.
- "..The global nitrogen-use efficiency is low, resulting in pollution by reactive nitrogen which threatens human health, ecosystem services, contributes to climate change and stratospheric ozone depletion. Only a small proportion of the plastics produced globally are recycled, with most of it damaging the environment and aquatic bio-diversity. Both these are global challenges and the resolutions piloted by India at the UNEA are vital first steps towards addressing these issues and attracting focus of the global community," said a press statement by the Union Environment Ministry.
- A top official in the Ministry revealed that India's commitment to phase out plastic would continue irrespective of the global resolution. "It's a significant step that such a resolution was accepted at the UN. Timelines per se are matters of further negotiation and debate," Secretary, Union Environment Ministry C.K. Mishra said. "However, our commitments and efforts to reduce plastic use will continue at our pace."
- A Central Pollution Control Board estimate in 2015 says that Indian cities generate 15,000 tonnes of plastic waste daily and about 70% of the plastic produced in the country ends up as waste.
- Currently, seventeen States have plastic bans, on paper. Experts have rued the inadequacy of collection and recycling systems to address the burgeoning plastic waste problem.

INDIAN ECONOMY

1. Low conviction hinders fight against spurious drugs

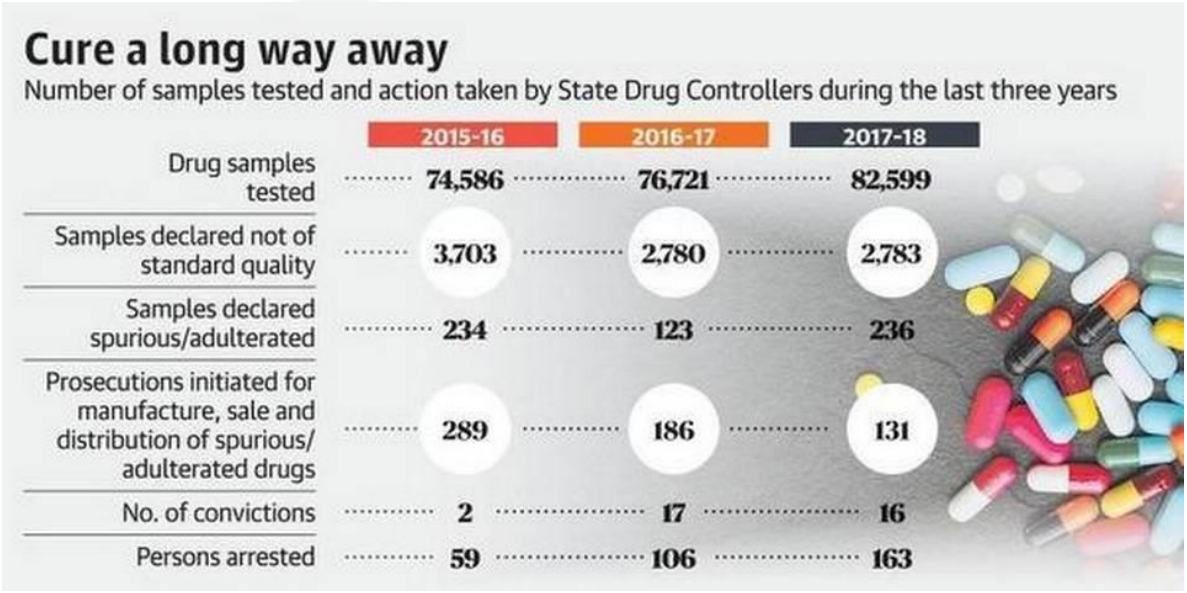
What's in the news?

- According to figures provided by the Drug Controller, India has been able to decide only 35 cases of the 606 prosecutions launched against the manufacture, sale and distribution of spurious or adulterated drugs from 2015 to 2018.
- During this time, 328 persons were arrested. As many as 15,749 samples were

declared not of standard quality and 593 samples were declared spurious or adulterated, while 2,33,906 samples were tested during the three-year period.

Context:

- It is important to note that spurious drugs can have harmful side-effects and can even kill.
- As a matter of fact, the 54th Parliamentary Standing Committee on Chemicals and Fertilizers noted that "considering the size of the country and the huge quantum of medicines being distributed and sold in the country, this sample size is not adequate to measure the actual problem of spurious and non-standard quality drugs in the country."
- "We are dismayed to note that the decision is pending in most cases. There is an urgent need for time-bound decisions on prosecutions launched against manufacture, sale and distribution of spurious and non-standard quality drugs. Special courts should be opened in all states/UT and these courts may also impressed upon the need for timely disposal of cases," the Committee noted.
- "Previously the Ministry of Health and Family Welfare had conducted a country-wide survey for the years 2014-16 to determine the extent of spurious/ not of standard quality of drugs in the country. A total of 47,012 drug samples were tested/analysed out of which 1,850 samples were declared as not of standard quality and 13 samples were declared spurious," noted data provided by the Union Health Ministry.
- Meanwhile the Parliamentary Committee has strongly recommended that the government take adequate measures to considerably increase the number of samples of drugs to be tested so as to instil fear in those who indulge in sale/distribution of spurious/non-standard quality drugs.



SCIENCE AND TECHNOLOGY

1. A gel to selectively remove oil or water

What's in the news?

- A natural biopolymer, chitosan (a kind of polysaccharide obtained from a chitin shell such as the shrimp's), which is water-soluble, has been chemically modified by researchers at the Indian Institute of Technology (IIT) Guwahati to selectively remove either an oil or water phase from an oil-water mixture.
- This becomes possible by making the chitosan-based material, also biodegradeable, to exhibit either an extremely water-repelling property in air (like the lotus leaf) or an extremely oil-repelling property under water (like a fish scale).
- In a breakthrough, the researchers have also made it possible to switch the chitosan-based material's property — from being extremely water-repelling to extremely oil-repelling and vice-versa — by treating it with certain chemicals. It is also possible to repeatedly switch from one property to another.

A Closer Perspective:

- To prepare the water or oil repelling chitosan, scientists first converted the material into nanoparticles and then to a stable gel material by treating it with a chemical (5Acl).
- This gel was found to have chemically active residues (amines and acrylate), which when treated with a small amine resulted in optimisation of the two very different properties in the same material.
- Scientists mention that "This is the first time that the liquid repellency property of the material is made switchable, from superhydrophobic to superoleophobic under water and back to superhydrophobic by treating the material at low pH and ethanol, respectively."
- The chitosan — which is converted into a stable gel — allows the researchers to selectively remove the oil or water phase from an oil-water mixture by making the material either superhydrophobic or superoleophobic, respectively.
- For example, if the oil spill (in water) is less, the material can be made water-repelling to remove or collect the oil. In case the spill is huge and the water phase relatively less, the material can be made extremely oil-repelling to collect or remove water.

Property switch

- By treating the material with acid (pH 1) for about 15 minutes, scientists were able to completely switch the property of the material — from being extremely water-repelling to becoming extremely oil-repelling under water.
- Similarly, by treating the biopolymer with ethanol for 10 minutes followed by air

drying, the team was able to switch the property from being oil-repelling to becoming water-repelling.

- The scientists added, “The water contact angle of the superhydrophobic biopolymer is over 152º and the oil contact angle under water is nearly 159º.” **The higher the contact angle the greater is the liquid repellency of the material.**

Superior performance

- The scientists tested the ability of the biopolymer to separate oils — kerosene, motor oil, olive oil and even crude oil — of different densities from water.
- The scientists went on to add that “Under water, we were able to completely remove even crude oil from the water phase. The selective separation efficiency for both oil and water phases was above 95% immaterial of the viscosity of the oil.”
- The biopolymer’s superhydrophobic property remained intact under diverse chemical conditions such as extreme pH (pH 1 and pH 13), sea and river water for seven days, and high (100º C) and low (10º C) temperatures.
- The material was found to retain both hydrophobicity and oleophobicity even when the top surface of the biopolymeric material was physically abraded using sand paper. Despite the abraded surface being cleaved through manual peeling using an adhesive, the liquid repellence property remained intact. No change in this was seen after the mechanically damaged material was subjected to even a continuous stream of sand grains. Exposure to UV light for a month too did not destroy this repellence property.

2. Solar tsunami can trigger the sunspot cycle

Some Basic Concepts:

- Like the Earth, the Sun has got a magnetic field. In fact, it is possible to imagine that the Sun is a big magnet, with a north pole and a south pole. However, this is a very simplified picture.
- If we look at the Sun more closely using satellites or telescopes, we find that the magnetic field is much more complicated.
- The fact that the Sun has a magnetic field has only been known for about 100 years. This was discovered in 1908, by the American astronomer George Ellery Hale (1868-1938). He managed to show that sunspots are regions on the solar surface which have a very strong magnetic field. This was the first evidence of the solar magnetic field.
- Sunspots are the most prominent magnetic feature on the solar surface (sometimes they can be seen by the naked eye). The number of sunspots visible on the solar surface changes fairly regularly in time.

- The number of sunspots increases and decreases over a period of 11 years. This is called the solar cycle. Moreover, the position of sunspots also changes in time. In 11 years, i.e. one solar cycle, sunspots move from high latitudes to the equator.
- When scientists plot the position of the sunspots versus time, they obtain what are known as butterfly diagrams.
- This behaviour of the sunspots provide scientists with important clues on how the magnetic field behaves in space and in time.

Science in the news:

- It is believed that the "**solar dynamo**" — a naturally occurring generator which produces electric and magnetic fields in the sun — is linked to the production of sunspots.
- What kick-starts the 11-year sunspot cycle is not known. Now, a group of solar physicists suggests that a "solar tsunami" is at work that triggers the new sunspot cycle, after the old one ends.
- The extreme temperature and pressure conditions that prevail some 20,000 km below the sun's surface cause its material to form a plasma, consisting primarily of hydrogen and helium in a highly ionised state.
- The plasma is confined with huge magnetic fields inside the sun.
- Scientists point out that, "The [sun's] toroidal magnetic field, from which sunspots get generated, wraps around the sun in the east-west direction."

Celestial rubber bands:

- These magnetic fields behave like rubber bands on a polished sphere.
- They tend to slip towards the poles.
- Holding these fields in their place requires that there is extra mass (plasma mass) pushing at the bands from higher latitudes. Thus, a magnetic dam is formed which is storing a big mass of plasma. At the end of a solar cycle, this magnetic dam can break, releasing huge amounts of plasma cascading like a tsunami towards the poles.
- These tsunami waves travel at high speeds of about 1,000 km per hour carrying excess plasma to the mid-latitudes. There they give rise to magnetic flux eruptions. These are seen as the bright patches that signal the start of the next cycle of sunspots. The tsunami waves can traverse the required distance in a few weeks, unlike in earlier models.
- Further, it is important to note that the solar cycle and sunspot activity are intimately connected with space weather.

GS4 Related

Nothing here today!!!

Editorials

INDIAN ECONOMY: AVIATION SECTOR

1. Boeing: crashed and grounded

Editorial Analysis:

What is the 737 MAX?

- The Boeing 737 MAX series is a single aisle aircraft fitted with high-bypass twin-turbofan engines. It is the fourth generation variant of the Boeing 737 aircraft, a base model which has been in production since the 1960s.
- In the commercial aviation business, it is locked in competition with the Airbus A320, another single aisle and newer aircraft family, manufactured by Boeing's European rival, Airbus SE, in the high stakes and crucial short-haul aircraft market.
- For Boeing, this model is the fastest-selling aircraft in its history — it cites about 5,000 orders from over 100 customers.
- Currently, there are four commercial variants (MAX 7, 8, 9, 10), with a seating capacity that varies between 172 and 230. With its CFM-manufactured LEAP engines, the 737 MAX family has, depending on the variant, a flying range of up to 7,130 km.
- The suffix MAX is a coinage meant to highlight the potential of the aircraft in offering the "maximum competitive advantage" to customers.
- The flight deck and cabin have had several enhancements, which include more flight control software, some automated controls and touches such as better lighting and overhead storage.
- The engines, which have composite components in some stages, offer significantly better fuel efficiency — a key draw for customers — compared to earlier engines on the third generation 737 variants.

What led to the global grounding?

- On October 29, 2018, a two-month-old Boeing 737 MAX 8, operated by low-cost airline Lion Air of Indonesia, crashed approximately 12 minutes after being airborne, killing its 189 passengers and crew.
- The pilot, with more than 6,000 flight hours and the co-pilot, with more than 5,000 hours, formed an experienced team.
- Further, recently, another flight by a four-month-old 737 MAX 8, operated by

Ethiopian Airlines, crashed approximately six minutes after takeoff.

- All 157 passengers and crew were killed. The disparity in the flight hours of the crew, about 8,000 for the pilot, and just 200 hours for the co-pilot, has led to some scrutiny.
- Similarities between the two events, of the flight crew reporting certain technical difficulties, requesting a return to base, the scientific tracking of an unstable flight trajectory and airspeeds and also the 'gathering of some technical evidence' (in Ethiopia), have led analysts to conclude that there could be an issue with one of the aircraft's key control systems.
- It may take time for data from the black boxes to be analysed and acted upon.

How did India react?

- India's reaction was in two quick stages, which impacted the operations of the country's two 737 MAX operators, private airlines Jet Airways and SpiceJet, with a fleet of 5 and 12 aircraft respectively (according to data from the Directorate-General of Civil Aviation, the country's nodal aviation agency).
- Another aircraft data site puts the fleet composition at 9 and 14 respectively.
- The DGCA initially permitted operations to continue, with key directives that kicked in from March 12, 2019.
- In a notice, dated March 11, 2019 (now withdrawn), taking into account "compliance of all manufacturer Standard Operating Procedures/operations circulars and Federal Aviation Administration [FAA] emergency Airworthiness Directives," it advised additional actions for airline engineers and maintenance crew such as "no minimum equipment list (MEL) release" — a list which allows aircraft operation, under specified conditions — if there were control system red flags.
- It also mandated key checks during aircraft transit.
- Finally, flight operations departments were to ensure, among other things, that the minimum experience levels of the two pilots were "1,000 and 500 hours" respectively.
- The DGCA said these were "interim safety measures" and there was communication with the manufacturer and the FAA.
- On March 13, 2019, it issued a follow-up notice, deciding that "the operation of B-737 MAX aircraft would not take place from/to Indian airports and transit or enter into Indian airspace effective from March 13, 2019 till further notice." All operations ceased by 4 p.m. local time.

How was the reaction overseas?

- The ban was rolled out in phases.
- In the Asia-Pacific region, the grounding, on March 11, 2019, by the Civil Aviation

Administration of China, which took the global lead, has hit the largest 737 MAX fleet in operation.

- Figures (compiled in early March 2018) from a leading fleet data site show that of the estimated 371 MAX aircraft in operation, a quarter, or close to 97 planes, are used by a raft of China-based airlines.
- With over 50 operators based in 34 countries, the Asia-Pacific region is the base for close to 37% of the worldwide fleet.
- The U.S. follows next with 30.2%. The situation was a bit different in the U.S., with the FAA playing outlier and then announcing a grounding.

Is the aircraft flawed?

We don't know as yet. Some media reports cite the huge financial impact of the global grounding per day and potential damage to an order book estimated to be several billions — there is even a figure of "half-a-trillion dollars" floating around.

Even worse are signs of a loss in airline confidence. For example,

a) some affected airlines are contemplating demanding compensation (low-cost carrier Norwegian Air has been quite vocal about this, highlighting a "1% loss of its seat capacity"), while
b) other carriers, such as Lion Air, are trying to up the ante by making veiled threats of order cancellations and buying Airbus aircraft.
c) Kenya Airways, though not a 737 MAX operator, says it could re-consider a potential order. Some others still are considering scouting around for third generation and "safer" 737 variants.

The Main Focus of Attention Now

- The main attention is now on a control system in the plane.
- Preliminary analysis of both crashes has focussed on the "anti-stalling system" called the Manoeuvering Characteristics Augmentation System (MCAS).
- It was introduced after the newer and more fuel efficient engines for this aircraft type, which have a much larger diameter and heavier weight than earlier ones, have had to be fixed higher and more forward on the wings than done previously for the earlier 737 models, consequently making changes to the aircraft's flight profile.
- As a result, there has been a possibility of the aircraft, while in flight, pitching a bit more higher than intended.
- In certain stages of flight, this could lead to what is called a stall which can have dangerous consequences. The automated MCAS comes in here.
- With the Angle of Attack (AoA) sensors, it detects when the aircraft is at risk and initiates corrective manoeuvres using the stabilisers.

- Some senior Boeing 737 pilots take the view that the MCAS is supposed "to work quietly in the background."
- It is important to note that the MCAS could force the aircraft into a dive if there are erroneous inputs from the AoA sensors (An FAA emergency airworthiness directive highlighted this).
- After the Indonesia crash, some pilot unions, especially in the U.S., flagged it as being a nasty surprise and there having been inadequate exposure to, information about and training for this feature.
- There is some commentary on this putting it down to the manufacturer not thinking of creating awareness of this feature to be a necessity.

Voices from the Government of India on flight safety:

- In October, 2018, the Vice President of India, Shri M. Venkaiah Naidu has said that safety of passengers should be paramount for any transportation service and asked aviation industry to place passengers' convenience at the centre of all activities.
- The Vice President said that governments, policy makers and business enterprises must ensure hassle free environment at Airports for commuters. He further said that Government's efforts to improve domestic air connectivity and make it affordable would get a boost if quality infrastructure is built and efficient customer services are provided by airliners.
- ***Public Private Partnership*** is the most suitable mode of developing such infrastructure and it is the best model to provide quality services at an affordable price as it allows competition among different entities, he added.
- The Vice President said that connectivity is the key for economic growth and added that aviation industry has huge scope for development. He said that the growth of the aviation sector will have a multiplier effect on the Indian economy as it would positively impact hospitality and tourism sectors, among others.
- The Vice President said that effective implementation of UDAN scheme would develop regional connectivity and promote economically viable flights on regional routes. He asked Airport authorities and PPP operators to focus on making it accessible and affordable to the common man.

Are safety issues new to aviation?

- No. Safety issues are not new to the aviation industry. As a matter of fact, aviation incidents have led to a review of every aspect of the aviation ecosystem.
- For example, Airbus SE faced a crisis when its Airbus A320 aircraft suffered accidents just after its introduction (1988 onwards); there was one incident in India (1990).
- Its "fly-by wire" controls were deemed too advanced and complex but the aircraft flies on, ticking many boxes for several airlines.

- More recently, Airbus had a significant technical issue with an engine type (the manufacturer is sorting it out) on its Airbus A320 Neo aircraft.
- In 2013, Boeing rode out a crisis, but with the cost of compensation, affecting its composite-built aircraft, the Boeing 787 'Dreamliner', and involving its lithium-ion batteries.

Where does this leave Boeing?

Experts believe that this leaves Boeing with an extended grounding — which some experts estimate could be till May 2019 or beyond.

As a matter of fact, the Ethiopian crash even caused it to drastically tone down the unveiling of a newer model of its flagship Boeing 777 family, with its unique feature of partially folding wings.

Given the reported conflict of interest in certification of aircraft, Boeing will have to work fast and transparently.

It will have to look at tackling the issue from three angles, as aviation experts have suggested:

a) if it is a software issue, it could be sorted out in the planned battery of software upgrades — this could be soon.
b) If it is about better pilot training, it will have to work out revamped and comprehensive training modules across the world and additional type certification.
c) Aviation authorities will also have to maintain vigil as passenger safety is paramount. This could affect some airlines in terms of costs.
d) Finally, if it is traced to a structural issue, the American aerospace giant could be hitting an air pocket, with ripple effects down the aviation global supply chain.
e) The 737 is a cash cow, but there are already those who accuse Boeing of pushing its 52-year-old plane model too far.

INDIAN POLITY AND GOVERNANCE

1. Quotas and a verdict

Editorial Analysis:

What's in the news?

- The introduction of a 10% quota for the economically backward through the Constitution (103rd Amendment) Act has been challenged in the Supreme Court.
- The principal grounds cited in support of the challenge are mainly found in a 1992 judgment of a nine-judge Bench in Indra Sawhney vs Union of India.

- A look at the context in which Indra Sawhney, or the Mandal Commission case, was decided, its major findings and how they are being cited in the challenge to the 103rd Constitution Amendment.

What is the background of the case?

- In December 1980, the Second Backward Classes Committee, headed by B.P. Mandal, better known as the Mandal Commission, gave its report.
- It recommended 27% reservation for Other Backward Classes (OBCs) and 22.5% for the Scheduled Castes/Scheduled Tribes.
- A decade later, in August 1990, the government issued an office memorandum (OM), providing 27% vacancies for Socially and Educationally Backward Classes to be filled by direct recruitment.
- Violent protests greeted this memorandum, and a challenge was mounted in the Supreme Court.
- In 1991, a new government under the Congress issued a second OM notifying an additional reservation of 10% for other economically backward sections.
- A nine-judge Bench of the Supreme Court pronounced a 6:3 majority verdict in the Mandal Commission case, upholding the 27% quota in the first OM, but struck down the 10% quota based on economic criteria.

What were its main findings?

- The majority judgment held that “a backward class cannot be determined only and exclusively with reference to economic criterion”.
- “It may be a consideration or basis along with, and in addition to, social backwardness, but it can never be the sole criterion,” Justice B.P. Jeevan Reddy wrote for the majority.
- It said backward classes could be identified on the basis of caste.
- The Bench also laid down that reservation not cross the 50% limit, unless a special case was made out for extraordinary situations and peculiar conditions to relax the rule.
- It wanted the ‘creamy layer,’ the advanced sections of the backward classes, excluded from reservation and asked the government to evolve suitable criteria to exclude the ‘creamy layer’.

Why cite the Indra Sawhney case?

- After 27 years, the Constitution (103rd Amendment) Act, 2019, provides for 10% reservation in government jobs and educational institutions for the “economically backward” in the unreserved category.
- The Act amends Articles 15 and 16 of the Constitution by adding clauses empowering

the government to provide reservation on the basis of economic backwardness.

- The 10% economic reservation is over and above the 50% cap.
- ***The Constitution does not define the term 'backward classes,'*** though it endorses the role of the state in ensuring and promoting social equality.
- Over the years, caste has been a constant factor in identifying social and educational backwardness.
- As the Mandal Commission case discusses the basis for identifying OBCs, its findings are being cited by those who have challenged the amendment. They say the amendment violates the bar on quotas solely based on economic criteria and breaches the 50% quota limit which, they argue, is part of the Basic Structure of the Constitution.
- The petitions, including those by Youth for Equality and activist Tehseen Poonawala, argue that the amendment excludes the OBCs and the SCs/STs from the scope of economic reservation.
- They contend that the high creamy layer limit of ₹8 lakh a year ensures that the elite capture the reservation benefits. They argue that the amendment does not clearly define the term "economically weaker sections."

What is the government's response?

- In its response by affidavit, the government says the amendment was "necessitated to benefit the economically weaker sections of the society who were not covered within the existing schemes of reservation, which, as per statistics, constituted a considerably large segment of the Indian population."
- It quoted the 2010 report of the Commission for Economically Backward Classes, chaired by Major General S.R. Sinho (retired), which said 18.2% of the general category came under the below poverty line.
- It has said the economically weaker sections required as much attention as the backward classes.
- The government said the 50% ceiling applies to the SCs/STs and the OBCs. The new provisions separately deal with the economically weaker sections. It argued that a "mere amendment" to an Article would not violate the basic feature of the Constitution. The matter is likely to be referred to a Constitution Bench.

Prelims Based MCQ Practice Questions

1. Consider the following statements:
   1) Biopolymers are polymers produced from natural sources either chemically synthesized from a biological material or entirely biosynthesized by living organisms.
   2) Biopolymers are a very promising alternative to synthetic polymers with inherent environmental benefits.

Which among the above statements is/are correct?

a) 1 Only
b) 2 Only
c) Both 1 and 2
d) d) Neither 1 nor 2

Answer (c) Both 1 and 2

- Biopolymers are a very promising alternative to synthetic polymers with inherent environmental benefits.
- Biopolymers are polymers produced from natural sources either chemically synthesized from a biological material or entirely biosynthesized by living organisms.
- The use of biopolymers from different sources has been investigated for many years for pharmaceutical and biomedical applications.
- This has resulted in a multitude of healthcare products on the market that use biopolymers in the formulation as a functional excipient or even as an active ingredient.
- The diverse compositions, tuneable physical behaviour, and wide variety from which to choose have sparked the interest in biopolymers.
- In addition, the relatively low cost of and renewable nature, make this class of material particularly attractive to high-value sectors such as the pharmaceutical and biomedical industries.

2. Consider the following statements:
   1. There are various styles of Chhau dances. Of these Purulia, Seraikella and Mayurbhanj are most popular.
   2. The main difference among these dance styles lies in the use of masks. Purulia Chhau is traditionally performed in the open air and on level ground. The performance

begins with an invocation to Lord Ganesha.

Which among the above statements is/are **incorrect**?

a) 1 Only
b) 2 Only
c) Both 1 and 2
d) Netither 1 nor 2

Answer (d) Neither 1 nor 2

- The Chhau dances are very popular in Bengal. Bihar and Orissa. Purulia is the name of a district in West Bengal. 'Chhau' is a generic term. There are various styles of Chhau dances. Of these Purulia, Seraikella and Mayurbhanj are most popular. The main difference among these dance styles lies in the use of masks. Purulia Chhau is traditionally performed in the open air and on level ground. The performance begins with an invocation to Lord Ganesha. In the repertoire of Purulia Chhau, there are several dance numbers which are based on episodes from the Mahabharata and a few Puranas. Musical instruments played a very vital role during this dance performance.

3. Consider the following statements:
   1. The United Nations Environment Assembly is the world's highest-level decision-making body on the environment.
   2. The Environment Assembly meets biennially to set priorities for global environmental policies and develop international environmental law.

Which among the above statements is/are **correct**?

a) 1 Only
b) 2 Only
c) Both 1 and 2
d) Netither 1 nor 2

Answer (c) Both 1 and 2

- The United Nations Environment Assembly is the world's highest-level decision-making body on the environment. It addresses the critical environmental challenges facing the world today. Understanding these challenges and preserving and rehabilitating our environment is at the heart of the 2030 Agenda for Sustainable Development.

- The Environment Assembly meets biennially to set priorities for global environmental policies and develop international environmental law. Through its resolutions and calls to action, the Assembly provides leadership and catalyses intergovernmental action on the environment. Decision-making requires broad participation, which is why the Assembly provides an opportunity for all peoples to help design solutions for our planet's health.

4. Consider the following statements:
    1. Sunspots are a common sight on our Sun during the years around solar maximum.
    2. Solar maximum or solar max is the period of greatest solar activity in the solar cycle of the Sun, where one solar cycle lasts about 11 years.

Which among the above statements is/are **correct**?

a) 1 Only
b) 2 Only
c) Both 1 and 2
d) Netither 1 nor 2

Answer (c) Both 1 and 2

- Sunspots are a common sight on our Sun during the years around solar maximum.
- Solar maximum or solar max is the period of greatest solar activity in the solar cycle of the Sun, where one solar cycle lasts about 11 years.
- Around solar minimum, only very few or even no sunspots can be found.

Mains Based Practice Questions:

1. The United Nations Security Council (UNSC) is in urgent need for reform to reflect a more contemporary vision of the world. Discuss. (12.5 Marks; 250 Words)
2. Plastics have emerged to be a major causative factor in environmental pollution these days. Examine the steps the world and India have taken in the recent past to address this concern. (12.5 Marks; 250 Words)