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Comprehensive NEWS Analysis

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Polity and Governance

1.   India ranks 147ᵗʰ in Oxfam world inequality Index

Context:

India has been ranked among the bottom 10 countries in a new worldwide index on the commitment of different nations to reduce inequalities in their populations.

World inequality Index:

- UK-based charity Oxfam International's 'Commitment to Reducing Inequality (CRI) Index' ranks India 147th among 157 countries.

- It describes the country's commitment to reducing inequality as a "a very worrying situation" given that it is home to 1.3 billion people, many of whom live in extreme poverty.

- The second edition of the annual index finds that countries such as South Korea, Namibia and Uruguay are taking strong steps to reduce inequality.

- However, countries such as India and Nigeria "do very badly" overall, as does the US among rich countries, showing what Oxfam describes as a lack of commitment to closing the inequality gap.

- The index is based on a new database of indicators, now covering 157 countries, which measures government action on social spending, tax and labour rights — three areas found to be critical to reducing the gap.

- The index is topped by Denmark, based on its high and progressive taxation, high social spending and good protection of workers.

Causes for the inequality in India:

- Oxfam has calculated that if India were to reduce inequality by a third, more than 170 million people would no longer be poor.

- Government spending on health, education and social protection is woefully low and often subsidises the private sector. Civil society has consistently campaigned for increased spending,

- In reference to India, the index finds that while the tax structure looks reasonably progressive on paper, in practice much of the progressive taxation, like that on the incomes of the richest, is not collected.

- India also fares poorly on labour rights and respect for women in the workplace, reflecting the fact that the majority of the labour force is employed in the agricultural and informal sectors, which lack union organization and enforcement of gender rights.

Progress in other countries:

- It also cited other countries that have taken strong steps to tackle inequality in the past year.

- Ethiopia, although at the 131st place, now has the sixth highest level of education spending in the world.
- Chile, at 35th, increased its rate of corporation tax and Indonesia, at 90th, has increased its minimum wage and spending on health, the report noted.

Way forward:

The analysis, by Oxfam and non-profit research group Development Finance International (DFI), recommends that all countries should develop national inequality action plans to achieve the UN's Sustainable Development Goals (SDGs) on reducing inequality.

2.   When a woman is harassed at work

Context:

- Over the last several days, several women in India have called out influential men — actors, stand-up comics, senior journalists — for alleged sexual harassment.
- Some of these allegations relate to actions of then colleagues of the women.

Sexual Harassment of Women at Workplace Act, 2013

- The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act was passed in 2013.
- It defines sexual harassment, lays down the procedures for a complaint and inquiry, and the action to be taken. It broadens the Vishaka guidelines, which were already in place.

Vishaka guidelines

- These were laid down by the Supreme Court in a judgment in 1997.
- This was on a case filed by women's rights groups, one of which was Vishaka.
- They had filed a public interest litigation over the alleged gang-rape of Bhanwari Devi, a social worker from Rajasthan. In 1992, she had prevented the marriage of a one-year-old girl, leading to the gang-rape in an act of revenge.
- Legally binding, this defined sexual harassment and imposed three key obligations on institutions — prohibition, prevention, redress. The Supreme Court directed that they establish a Complaints Committee, which would look into matters of sexual harassment of women at the workplace.

How does it define sexual harassment?

Sexual harassment includes "any one or more" of the following "unwelcome acts or behaviour" committed directly or by implication:

CASES SO FAR: WIDE DISPARITY AMONG STATES

SINCE 2015, between 500 and 600 cases have been filed each year under the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013. This emerges out of figures presented in a Parliament reply by the Women & Child Development Ministry in July.

While the nationwide number of cases has remained in the same range each year, the 2018 count had already reached that range by July 27, when the reply was tabled. The reply did not specify the date up to which cases in 2018 are accounted for.
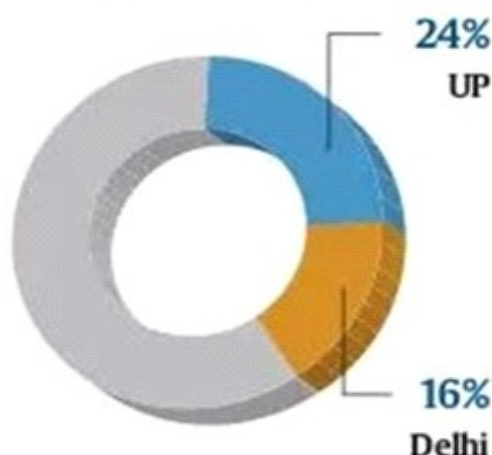
ALL-INDIA CASES

2015	522
2016	539
2017	570
2018*	533

Data presented on July 27, 2018

The figures showed wide disparities among the states. UP, the most populous, accounted for a quarter of all cases between 2015 and 2017, while Delhi accounted for 1/6th. No other state accounted for more than 7%.

2015-17: 1,631 CASES

24% UP

16% Delhi

Source: Ministry of Women & Child Development (reply in Lok Sabha, July 2018)

STATES WITH MOST CASES

STATE	2015	2016	2017
UP	120	129	147
Delhi	100	82	77
MP	38	35	39
Haryana	33	30	39
Rajasthan	23	31	31
Karnataka	21	22	38
Tamil Nadu	24	38	17
W Bengal	19	23	28
Bihar	12	20	15
Telangana	20	12	8

Handbook on Sexual Harassment of Women at Workplace:

Any other unwelcome physical, verbal or non-verbal conduct of sexual nature.

The Women & Child Development Ministry has published a Handbook on Sexual Harassment of Women at Workplace with more detailed instances of behaviour that constitutes sexual harassment at the workplace. These include, broadly:

- Sexually suggestive remarks or innuendos; serious or repeated offensive remarks; inappropriate questions or remarks about a person's sex life

- Display of sexist or offensive pictures, posters, MMS, SMS, WhatsApp, or emails

Intimidation, threats, blackmail around sexual favors; also, threats, intimidation or retaliation against an employee who speaks up about these

- Unwelcome social invitations with sexual overtones, commonly seen as flirting

Unwelcome sexual advances.

- The Handbook says "unwelcome behaviour" is experienced when the victim feels bad or powerless; it causes anger/sadness or negative self-esteem. It adds unwelcome behaviour is one which is "illegal, demeaning, invading, one-sided and power based".

Additionally, the Act mentions five circumstances that amount to sexual harassment — implied or explicit promise of preferential treatment in her employment; implied or explicit threat of detrimental treatment; implied or explicit threat about her present or future employment status; interference with her work or creating an offensive or hostile work environment; humiliating treatment likely to affect her health or safety.

Challenges of the #MeToo movement

- In Public 'naming and shaming', there is danger of personal scores being settled in public.
- There is ethical aspects of naming harassers without them being afforded the chance to be heard and who is accountable for naming someone falsely.
- As the movement is rising, what are the institutional processes it seeks to install.
- The culture of male entitlement and patriarchy is so prevalent that most victims have thus far preferred silence to challenge these cases.
- #MeToo is a challenge to these attitudes that enforce a culture of silence.

3. Looking beyond the legality of abortion

Context:

Despite abortion being legal in India for almost five decades, unsafe abortion continues to be the third largest cause of maternal mortality and accounts for 8% of all maternal deaths in India.

Why in news?

A recent study published in Lancet Global Health estimates that only 22% of the 15 million abortions that occur in India every year take place in a public or private health facility, and are performed by trained personnel, whereas the remaining 78% of abortions happen outside health facilities.

Reasons why 78% women access services outside the facilities?

- Many barriers force women to access abortion services outside the formal healthcare system

- such as lack of access to health facilities providing abortion services
- lack of awareness about abortion legality, especially among rural women
- The stigma associated with abortion and
- The costs incurred in seeking abortion services.

Medical Termination of Pregnancy (MTP) Act, 1971

- Allows for termination of pregnancy until up to 20 weeks of gestation for a broad range of conditions.
- India was one of the first 15 countries to legalize abortion services in 1971.
- When this law was passed, the only available technology for termination of pregnancies was dilatation and curettage (D&C)—now an outdated invasive medical procedure.
- Newer and safer technologies have made abortion a very safe out-patient medical procedure, and these technologies do not require specialist doctors.
- Therefore, the MTP Act allowing only allopathic doctors with specialization in obstetrics and gynaecology, or general practitioners who have undergone a 12-day certification training to legally provide abortion services.

Problems faced by rural women during abortion:

- Safe abortion services are not accessible in these areas due to the lack of trained providers.
- Due to various individual and social factors.
- The stigma around abortion compels women to choose less safe pathways for termination of pregnancy.
- BMC Public Health 2012 indicates that as many as 58% women feel guilty when they think about abortion and consider it a sin.
- Abortion care in the private sector cannot be afforded by rural women's.
- Public health care sector is far away, if they want to get aborted, they have to lose a day wage.

Way forward:

One way to strengthen access to safe abortion services is to speed up the amendments to the MTP Act and allow mid-level providers who are closer to the community to provide abortion. This would significantly help expand the cadre of providers that can offer abortion services.

The judiciary, policy makers, medical fraternity and civil society organizations must attempt to address the current barriers women face, and ensure that safe abortion services are delivered in a respectful and

non-judgmental manner. Let us hold ourselves accountable for the needless deaths and disabilities faced by women in a liberal legal environment.

4.   We need a pro-liberty judicial approach

Context:

Article 21 of the Constitution places the personal liberty of citizens on the highest pedestal, and so it is the duty of our courts to protect it. However, two recent decisions of the Supreme Court suggest that the court may not be showing sufficient zeal in upholding liberty.

Important analysis:

- Article 21 of the Indian constitution places the civil liberty on the highest pedestal and it is the duty of the Supreme Court to uphold the same.

- **In Romila Thapar v. Union of India**, the case concerning the Bhima-Koregaon accused, SC has failed to apply the '**clear and present danger**' test, which, if would have applied, could have quashed the proceedings against all the five accused and consequently released them.

- Supreme Court has ordered house arrest for them is not justified as the offence was not as grave or heinous as murder, or gang-rape.

- So, the denial of their release even though their activity does not pose any clear and present danger of a violence is violation of Article 21.

- Even in **Abhijit Iyer-Mitra v. State of Odisha**, the Supreme Court refused bail to journalist Abhijit Iyer-Mitra over his alleged objectionable remarks against Odisha's popular Konark Suns feelings, **an offence under section 295A of the Indian Penal Code**. But on the principles laid down by the court in **State of Rajasthan v. Balchand**, bail should have been granted.

- It is being argued, Supreme Court is deviating itself from its own precedents because the seven-judge Constitution Bench of the Supreme Court in **Maneka Gandhi v. Union of India**. ruled that the mere existence of an enabling law was not enough to restrain personal liberty.

Also, **In GHANI V JONES, UK** – Lord Denning held: The privacy and possessions of an individual were not to be invaded except for the most compelling reasons.

5.   Live-in partners can adopt now

Defying earlier Circular

- Individuals in a live-in relationship will once again be able to adopt children from and within India.

- The Child Adoption Regulatory Authority (CARA), in a circular issued on May 31, barred applicants in a live-in relationship from adopting a child.

- The decision was on the ground that the Authority would like the children to be placed only with a stable family and individuals in a live-in relationship cannot be considered as stable family.

Eligibility Criteria for Adoption

- The eligibility criteria under Adoption Regulations, 2017, permit single women to adopt a child of any gender, while single men can adopt only boys.

- When a married couple seeks to adopt a child, it needs to give its consent for adoption and should be stable marriage for at least two years.

- Applicants have to be physically, mentally and financially stable to raise a child.

Central Adoption Resource Authority

1. Central Adoption Resource Authority (CARA) is a statutory autonomous body of Ministry of Women & Child Development, Government of India.

2. It functions as the nodal body for the adoption of Indian children and is mandated to monitor and regulate in-country and inter-country adoptions.

3. CARA is designated as the Central Authority to deal with inter-country adoptions in accordance with the provisions of the Hague Convention on Inter-country Adoption, 1993, ratified by Government of India in 2003.

4. CARA primarily deals with the adoption of the orphan, abandoned and surrendered children through its associated /recognised adoption agencies.

6.   Centre begins work to widen pension cover under NSAP

Context:

- Union government taking measures to double the number of people covered by its pension scheme (**National Social Assistance Programme**) from the current 3.09 crore to more than six crore.

- The measure is in line with proposals made in the last budget.

Some facts:

- In 2018 Budget, Government had announced higher allocation for Social Security and Protection Programmes.

- Government's estimated schematic budgetary expenditure on health, education and social protection for 2018-19 was Rs 1.38 lakh crore against estimated expenditure of Rs 1.22 lakh crore in BE 2017-18.

- Allocation on National Social Assistance Programme (NSAP) for this year had been kept at Rs 9975 crore.

About National Social Assistance Programme

- It is a **Centrally Sponsored Scheme**.
- It provides **financial assistance** to the elderly, widows and persons with disabilities in the form of social pensions.
- It is a welfare programme being administered by the **Ministry of Rural Development**.
- However, this programme is being implemented in rural areas as well as urban areas.
- **Article 41** of the Indian Constitution (Directive Principles of State Policy) **directs the State to provide public assistance** to its citizens in case of 'unemployment, old age, sickness and disablement and in other cases of undeserved want within the limit of its economic capacity and development'.

The National Assistance Program consists of five sub-schemes:

1. Indira Gandhi National Old Age Pension Scheme (IGNOAPS)
2. Indira Gandhi National Widow Pension Scheme (IGNWPS)
3. Indira Gandhi National Disability Pension Scheme (IGNDPS)
4. National Family Benefit Scheme (NFBS)
5. Annapurna

7.   RTI rank: India slips a spot to No. 6

Why in news:

- Survey conducted by Halifax-based Centre for Law and Democracy (Canada) and Access Info Europe (Spain) shows India slips a spot to number 6 in RTI ranking.

Important facts:

- Score indicates the strengths and weaknesses of freedom of information laws around the world
- India ranks 6th with a score of 128 and has dropped down the list by two places.
- The global ratings, which started in 2011, have usually had India giving a good show: number two in 2011, 2012 and 2013

The score is based on 61 indicators categorized under seven heads –

- Right to access
- Scope
- Requesting procedure
- Exceptions and refusals
- Appeals

- Sanctions and protections
- Promotional measures.

Transparency International India:

Transparency International India conducted the survey and found several reasons for bad performance such as.

- An increasing vacancy in multiple state information commissions including the central information commission (CIC)
- There has been no appointment of State Chief Information Commissioners (as on October 10, 2018) for Andhra Pradesh, Jammu and Kashmir, and Nagaland, it said.
- Out of the 156 posts of Chief Information Commissioners and Information Commissioners at the Union/State level, around 48 posts are vacant,
- Most states are yet to make RTI accessible online for instance only 11 – out of a total of 29 states
- Structural and procedural difficulties have also proven to be one of the major hindrances

8. Global Hunger Index 2018

Why In news:

- 1 in 5 Indian children under the age of five are 'wasted', which means they have extremely low weight for their height, reflecting acute under-nutrition.
- Overall, India has been ranked at 103 out of 119 countries in the Index, with hunger levels in the country categorised as "serious".
- The report released by Washington-based International Food Policy Research Institute (IFPRI)
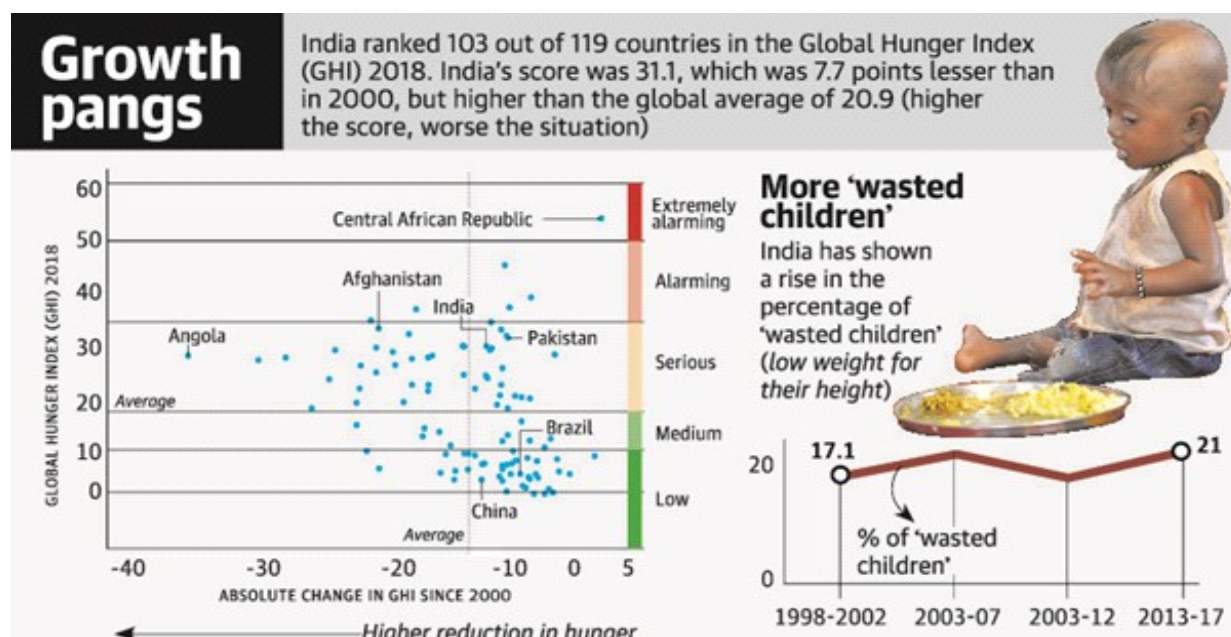
Main indicators in the report:

Four main indicators are used to calculate hunger levels in the report –

1. Undernourished population (1/3rd weight),
2. Child wasting (1/6th weight),
3. Child stunting (1/6th weight) and (iii)Child stunting (1/6th weight) and
4. Infant mortality rate (1/3rd weight).

India has shown improvement in three of the indicators during 2013-2017

- The percentage of undernourished people in the population has dropped from 18.2% in 2000 to 14.8% in 2018.
- The child mortality rate has halved from 9.2% to 4.3%, while child stunting has dropped from 54.2% to 38.4% over the same period.
- However, the prevalence of child wasting has worsened in comparison to previous reference years.
- It stood at 17.1% in 2000 and increased to 20% in 2005. In 2018, it stands at 21%.

Some facts:

- The only country with a higher prevalence of child wasting is the war-torn nation of South Sudan. (28%)
- Child wasting is high across South Asia, constituting a "critical public health emergency", according to UN organisations.
- Reports highlights the importance of attention to birth outcomes and breastfeeding.

International Relations

9.   Salvaging a strategic partnership

Context:

The India-Russia dialogue should not get inextricably entangled in the India-U.S. dialogue.

India-Russia annual summit:

India-Russia annual summit at their meeting in Goa, on October 2016, Prime Minister Narendra Modi quoted a Russian proverb to Russian President Vladimir Putin: "An old friend is better than two new ones." It was a reassurance that India's growing proximity to the U.S. would not affect India-Russia relations.

Discussion in the meet:

- The meet was whether or not the deal for the Russian air defence missile system, the   S-400.
- The U.S. has been publicly warning for months that this purchase could attract provisions under the Countering America's Adversaries through Sanctions Act (CAATSA), which authorises the U.S. government to impose sanctions on entities for "significant" defence transactions with Russia.

Informal meeting in Sochi in May 2018:

- Mr. Modi his informal meeting with Mr. Putin in Sochi in May this year.
- a U.S. official warned in a media conference that the S-400 acquisition would attract CAATSA (Countering America's Adversaries Through Sanctions Act)

The contract for the S-400:

- The contract for the S-400 was signed at the Delhi summit in a low-key manner.
- The one sentence announcement was in paragraph 45 of a rambling 68-paragraph Joint Statement.
- Mr Modi did not mention defence cooperation in his press statement, though it has been the centrepiece of India-Russia relations over decades.
- There was no mention also of other defence projects under discussion; their consideration may have been deferred to the meeting of the India-Russian Inter-Governmental Commission on Military-Technical Cooperation, in December.

Outlook on neighborhood:

- There is a general perception that Indian and Russian perspectives today differ on key issues in India's neighbourhood Pakistan,

Afghanistan and China — and on India's strategic linkages with the U.S., including on the Indo-Pacific.

- In the public domain, there were detailed discussions on "all international issues of mutual interest", specifically citing "common interests" on terrorism, Afghanistan and the Indo-Pacific.
- On Pakistan, one might note the nuance that the Joint Statement mentions cross-border terrorism, which some earlier Joint Statements did not.
- On Afghanistan, India expressed support for the "Moscow format", in which Russia involves regional countries and major powers in an effort to draw the Taliban into negotiations with the Afghan leadership. The U.S. has boycotted this initiative, but has initiated its own dialogue with the Taliban.

Conclusion:

Given the political dynamics in the U.S. today, a systemic solution to this problem is not evident. However, it has to be on the India-U.S. dialogue agenda. The India-U.S. strategic partnership is based on a strong mutuality of interests, but it was not intended to have the exclusivity of an alliance. India should not have to choose between one strategic partnership and another. The India-Russia dialogue should not get inextricably entangled in the India-U.S. dialogue.

10. India-Japan ties

Why In news:

- PM Modi to visit Japan and hopes are high for a greater synergy on security and connectivity issues
- Prime Minister of Japan, Shinzô Abe views India as the pivotal state in the Indian Ocean.
- A strong India is in Japan's interest, just like a strong Japan is beneficial for India – according to Abe.
- The Abe administration is focusing attention on two critical areas — maritime security and strategic connectivity.

Important facts:

- The 21st edition of exercise "Malabar" was held in the Bay of Bengal in July 2017.
- Malabar is an annual military exercise between the navies of India, Japan and the U.S. held alternately in the Indian and Pacific Oceans.

Japan's growing role in Asia:

- During the 2017 exercise, the Japanese Navy deployed a maritime surveillance aircraft and a submarine, demonstrating a readiness for a strategic role in Asia's sensitive littorals.

- In a bid to raise its Indian Ocean profile, Japan recently deployed its state-of-the-art helicopter carrier-destroyer, Kaga, to South Asia.

India-Japan on balancing Chinese power:

- Tokyo is keen that its military exchanges with India also include Army and Air Force exchanges.

- An Acquisition and Cross-Servicing Agreement — on the lines of the Logistics Exchange Memorandum of Agreement (LEMOA) with the U.S. — is in the offing, and there is also talk of collaboration in unmanned armoured vehicles and robotic systems.

- Japan also wants to assist India in improving the state of maritime domain awareness in the Indian Ocean, where India is keen to set up an 'information fusion centre'.

- Tokyo and New Delhi have been working together on infrastructure projects in the Northeast.

- They are also building the Asia-Africa Growth Corridor, whose four pillars — developmental projects, quality infrastructure, capacity building, and people-to-people partnership — make it an effective counterpoint to China's Belt and Road Initiative.

Trust and quality – Unlike China's Belt and Road projects, Japanese infrastructure initiatives are environmentally friendly and financially sustainable, with project managers laying particular stress on life cycle costs and asset resilience. Not only has Japanese development aid produced demonstrable results on the ground, Tokyo's insistence on transparency has generated enormous trust.

Convergence of interest – India's 'Act-East' outreach fit well with Mr. Abe's vision for a 'Free and Open Indo-Pacific'.

Regional order based on rules – Both countries want a regional order based on rules. However, neither country is keen to antagonize China. Japanese and Indian policymakers recognise the importance of balancing Chinese power in the Indo-Pacific.

However, to deter China's maritime aggression in their strategic backwaters, Japan and India have upped their defence engagement.

11. Pankaj Sharma appointed in UNCD

Why in news?

- Pankaj Sharma has been appointed as the ambassador and India's permanent representative to the United Nations Conference on Disarmament in Geneva.

- An official statement said in New Delhi yesterday that Mr Sharma will replace Amandeep Gill. He is currently the joint secretary of DISA (Disarmament and International Security Division) in the Ministry of External Affairs.

UNCD:

- The UNCD was formed in 1979 as the single multilateral disarmament negotiation forum of the international community.
- The conference has 65 members represent all areas of the world, including all known nuclear-weapon states (including India, Pakistan, Israel and North Korea) Resolutions adopted by UN General Assembly often request conference to consider specific disarmament matters. In turn, conference annually reports its activities to UNGA.

Objective of UNCD:

- Nuclear weapons in all aspects
- Other weapons of mass destruction
- Conventional weapons
- Reduction of military budgets
- Reduction of armed forces
- Disarmament and development
- Disarmament and international security
- Collateral measures; confidence building measures; effective verification methods in relation to appropriate disarmament measures, acceptable to all parties
- Comprehensive programme of disarmament leading to general and complete disarmament under effective international control

12. U.S. Pacific Command renamed U.S. Indo-Pacific Command

Context:

The United States renamed its oldest and largest military command - the Pacific Command - to Indo-Pacific Command, in a largely symbolic move to signal India's importance to the US military amid heightened tensions with China over the militarisation of the South China Sea.

Henceforth, the storied US Pacific Command, or PACOM, which was formed after World War II, will be known as the US Indo-Pacific Command. The Trump administration already has renamed Asia Pacific as Indo-Pacific and identified India as one bookend of the region.

What is United States Indo-Pacific Command (USINDOPACOM)?

- United States Indo-Pacific Command (USINDOPACOM) is a unified combatant command of the United States Armed Forces responsible for the Indo-Asia-Pacific region.
- It is the oldest and largest of the unified combatant commands. Its commander, the senior U.S. military officer in the Pacific, is responsible for military operations in an area which encompasses more than 100 million square miles (260,000,000 km2), or roughly 52 percent

of the Earth's surface, stretching from the waters off the west coast of the United States to the west coast of India, and from the Arctic to the Antarctic.

- The Commander reports to the President of the United States through the Secretary of Defense and is supported by Service component and subordinate unified commands, including U.S. Army Pacific, U.S. Pacific Fleet, U.S. Pacific Air Forces, U.S. Marine Forces Pacific, U.S. Forces Japan, U.S. Forces Korea, Special Operations Command Korea, and Special Operations Command Pacific.

- USINDOPACOM also has two direct reporting units (DRUs) - U.S. Pacific Command Joint Intelligence Operations Center (JIOC) and the Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DMHA) as well as a Standing Joint Task Force, Joint Interagency Task Force West (JIATF-W). The USINDOPACOM headquarters building, the Nimitz-MacArthur Pacific Command Center, is located on Camp H.M. Smith, Hawaii.

- The Command has about 375000 civilian and military personnel assigned to its area of responsibility.

- The 36 countries that comprise the Asia-Pacific region are home to more than 50 percent of the world's population, several of the world's largest militaries; and 5 nations has allied with the US through mutual defense treaties.

- US Pacific Fleet consists of approximately 200 ships, nearly 1100 aircraft, and more than 130000 sailors dedicated to protect mutual security interests.

- Admiral Phil Davidson replaces Admiral Harry Harris as Commander of the US Indo-Pacific Command

Why US renamed US Pacific Command to US Indo-Pacific Command?

- The move is also reflective of the growing importance of the Indian Ocean in US strategic thinking. Henceforth, the storied US Pacific Command, or PACOM, which was formed after World War II, will be known as the Indo-Pacific Command.

- The name change is largely symbolic as India is already considered as part of PACOM's area of responsibility which also includes China, Mongolia, Southeast Asia, Australia, Antarctica and the entire Pacific Ocean.

- The move signals towards the 2018 National Defence Strategy of the United States which acknowledges Pacific challenges and signals America's lasting commitment to the Indo-Pacific.

- However, for now, the name change will not immediately result in any shifts in the command's boundaries or assets across the vast area stretching from the western part of India to America's Pacific coastline.

How the move will be beneficial for the USA?

- The US has been pushing for stronger military relations with India since 2016.
- In 2016, the United States and India signed an agreement governing the use of each other's land, air and naval bases for repair and resupply, a step toward building defence ties.
- The deal was part of the Obama administration's "Pivot to Asia" strategy aimed at countering China's growing military strength in the waters.
- It was in 2016 itself when the US designated India as a "Major Defence Partner" with the aim of improving military cooperation and increasing information-sharing to ease defense deals.

The United States is also eager to enter into India's large defence market. India emerged as No. 2 weapons supplier, closing USD 15 billion worth of deals over the last decade.

13. India wins election to UN Human Rights Council with highest number of votes

Important facts:

- India was elected to the United Nations' top human rights body on Friday for a period of three years beginning January 1, 2019, getting 188 votes in the Asia-Pacific category, the highest number of votes among all candidates.
- The 193-member UN General Assembly held elections here for new members to the UN Human Rights Council. The 18 new members were elected by absolute majority through a secret ballot. Countries needed a minimum of 97 votes to get elected to the Council.
- In the Asia Pacific category, India got 188 votes followed by Fiji with 187 votes, Bangladesh 178, Bahrain and Philippines 165 each.
- India had previously been elected to the Geneva-based Human Rights Council for the 2011-2014 and 2014-2017 terms.

UNHRC:

- It is an inter-governmental body within the United Nations system
- It is responsible for strengthening the promotion and protection of human rights around the globe and for addressing situations of human rights violations and make recommendations on them.
- It was created by UNGA on 15 March **2006** by adopting resolution **60/251** to promote human rights globally.
- It had replaced former UN Commission on Human Rights.
- It is headquartered in **Geneva**, Switzerland.

Members:

- UNHRC is made up of 47 UN member states which are elected by UN General Assembly (UNGA) with specific number of seats allocated for each region of the globe.

- The term of each seat is three years, and no member may occupy a seat for more than two consecutive terms.

14. India-Italy Technology summit 2018

Why in news:

- Prime Minister of Italy Prof. **Giuseppe Conte** to visit India

- He will participate in the 24th edition of the **DST-CII India-Italy Technology Summit 2018**.

- The Technology Summit is organized by the **Department of Science and Technology** (DST).

- This edition of the Summit will focus on **seven areas**—Clean tech, Renewable, ICT, Healthcare, Aerospace, Education and Cultural Heritage.

- The objective of the Summit is to facilitate technology transfers, joint ventures, Research and Development, and market access between industry and research institutions in India and Italy.

- The visit will be part of the ongoing celebrations to commemorate **70th anniversary** of establishment of diplomatic relations between India and Italy.

Economy

15. State investment potential index (N-SIPI)

Context:

The efforts towards improving the business climate started and deepened when the government's flagship initiatives make in India and Start-Up India, took centre stage. The N-SIPI index provides a useful ground-level view of the business environment in various states.

State investment potential index (N-SIPI):

- The National Council of Applied Economic Research designed an index in 2016 using six metrics—land, labour, infrastructure, economic climate, political stability and governance.

- This was intended to give a granular picture of the investment climate. This state investment potential index (N-SIPI) incorporated the perceptions of entrepreneurs, based on survey of industrial units.

- In the third edition, N-SIPI 2018, feedback on the goods and services tax (GST)—the most important initiative on unifying India into a massive common market—was added.

The survey covered 1,049 units in 20 states and Delhi, ranking them on their investment potential based on the six major metrics

Land:

- There is also merit in recognising the strength of the states on individual metrics. For example, land by itself is a critical issue and is perceived to be complex because of the maze of regulations.

- However, strikingly, most states found no difficulty in acquiring land for industrial use except five: Bihar, Jharkhand, Karnataka, Maharashtra and Odisha.

- In these states, the percentage of respondents facing difficulties ranged from a little less than 30% to a little over 70%.

Labour:

- Labour constraints had wide differences across the states. States like Jharkhand, Karnataka, Himachal Pradesh and Assam were at one extreme, with more than 40% of the respondents expressing concern regarding the availability of skilled labour.

- Meanwhile, companies located in Gujarat, Haryana, Uttar Pradesh and West Bengal had more favorable views.

- Respondents have also shown major variation in perception of labour quality. Haryana and Gujarat continue to be viewed as the best states in this regard. Chhattisgarh reported severe problem.

Power:

- Power is a critical component of infrastructure that supports industrial advancement. The survey found that power availability was relatively good, with no significant difficulty faced by 78% of respondents on an average.

- States such as Chhattisgarh, Haryana, Punjab and Karnataka reported an excellent supply of power, while states that lagged behind included Uttarakhand, Jharkhand and West Bengal.

- With respect to water availability, the situation looked best in the case of Himachal Pradesh, Karnataka and Haryana. Surprisingly, despite being a coastal state, nearly one-fifth of the severely constrained firms belonged to Maharashtra, while Uttarakhand emerged as the most severely water-constrained state.

- Yet again, Haryana, Himachal Pradesh, Karnataka, Kerala and Rajasthan did very well, while a developed state like Telangana was ranked lowest in the perception of good road and rail connectivity in the state.

Industrial policy:

- The perception on industrial policy is critically important to promote efficiency and productivity.

- A well-designed industrial policy percolates through different levers, such as special support to a select group of industries, establishment of special economic zones to attract foreign participation or investment, privatization of public sector units, and promoting public-private ventures.

- A high proportion of positive responses came from Uttarakhand, Haryana, Gujarat and West Bengal. On the other hand, Karnataka, Chhattisgarh and Maharashtra appeared to be the poorest players in this regard.

Political stability and governance:

- GST was introduced in July 2017, and N-SIPI 2018 found that more than 40% of firms faced moderate to severe difficulty and 43% did not perceive any impact of the GST policy at all.

- This negatively impacted business operations severely, according to 17% of the firms.

- Unexpectedly, Bihar emerged as the most GST-friendly state followed by Gujarat, while firms from Madhya Pradesh, Kerala, Himachal Pradesh, Andhra Pradesh, Telangana, Uttarakhand and Tamil Nadu faced significantly negative impact.

- Of these, the worst hit was Andhra Pradesh, with 58% of respondents crying foul.

- On the related aspect of e-way bills, the majority of the respondents reported the impact being positive.
- The impact is remarkably good for Jharkhand (77%), followed by West Bengal and Bihar, while there is no perceived impact in Telangana, Maharashtra and Gujarat.

The findings demonstrate that states have to work hard to even remain where they are as the rankings are relative, competitive and in flux. They also show that learning lessons from other states is a good way forward.

16. IMF projects India's growth at 7.3% in 2018

why in news:

- IMF projects India to grow at 7.3% in 2018 and 7.4% in 2019.
- India had registered 6.7% growth rate in 2017.
- India's medium-term growth remains strong benefitting from the ongoing structural reforms like GST, the inflation-targeting framework, the Insolvency and Bankruptcy code, steps to liberalize foreign investment and improvement in ease of doing ranking.

Important facts:

International Monetary Fund:

- IMF is an international organization consisting of 189-member countries.
- It is headquartered in Washington, D.C.
- It is working to foster global monetary cooperation, secure financial stability, facilitate international trade, promote high employment and sustainable economic growth, and reduce poverty around the world.

World Economic Outlook:

- The World Economic Outlook (WEO) is a survey conducted and published by the International Monetary Fund.
- It is published biannually.
- It portrays the world economy in the near and medium context, with projections for up to four years into the future.

17. Agriculture R&D spent: A reality check

Context:

The Indian economy might be the bright spot in a gloomy global economic environment after having surpassed China's growth rate., But there is still little doubt over the supremacy of China in any of the economic sectors.
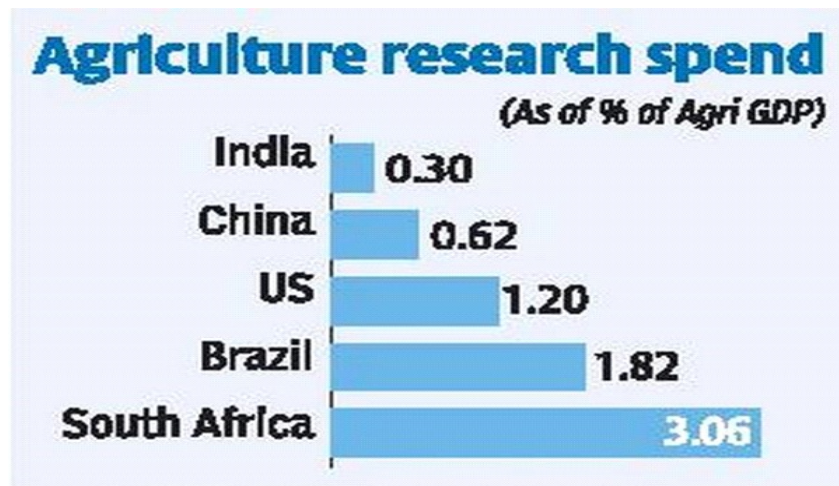
Important Analysis:

- According to the Economic Survey 2017-18, the total R&D expenditure in India as percentage of GDP has been stagnant at 0.6 to 0.7 per cent

in the last two decades — much lower than the US (2.8 per cent), China (2.1 per cent), South Korea (4.3 per cent) and Israel (4.2 per cent). To keep the numbers in perspective, one must keep in mind that GDPs of the US and China are around seven and four times bigger than that of India. So, when Ramesh Chand implicitly puts India's R&D spend on par with China, it calls for a reality check.

Agriculture research spend
(As of % of Agri GDP)

India	0.30
China	0.62
US	1.20
Brazil	1.82
South Africa	3.06

Source: ASTI; tradingeconomics.com

- Research is a capital-intensive business with a very long gestation period and highest level of uncertainty in terms of results. So, developing countries like India are very often seen struggling to balance spending between research and basic necessities. It is natural, therefore, that we as a country often debate the minuscule quantum of expenditure on R&D as a percentage of GDP in various sectors.

- Research expenditure on agriculture acquires special significance given the millions of Indians dependent on this sector. Also, when the country expects around 1.63 billion stomachs to feed by 2050 with ever shrinking cultivable land due to rising urbanization, research in agriculture is anything but a luxury.

India Vs China:

- When it comes to actual spending, Agriculture Science and Technology Indicators (ASTI) data reveal that India currently spends 0.30 per cent of agriculture GDP on agricultural research, which is just half the share invested by China (0.62 per cent).

- In absolute terms the gap would be much bigger. This contrast becomes starker when the spending on Agri research by private sector too is taken into account. Chand bemoaned in his speech about it and said that the private sector was investing in sectors other than in India's agriculture R&D and this needed to change.

- But again, changing the behaviour of private sector depends on policy imperatives. Profits are vital for the private sector and if governments can't create a conducive environment for it, private investments will not pick up. Although the latest data about private investment are not readily available, existing data suggest the scene is not that bleak either.

- In 1995, the share of private investment in total agriculture R&D spend was a trivial 3 per cent which grew to 9 per cent in 2000 and 16

per cent in 2006 in China. Back home, the private sector contributed an estimated 20 per cent of the country's agricultural research spending in 2009.

- China's spending on Agri research is 3-4 times that of India. It is high time India increases its share keeping in view Prime Minister Narendra Modi's goal of doubling farmers' income by 2022. The return on investment is agriculture sector is far better than other infrastructure projects.

- A mathematical model cited in a recently launched book 'Supporting Indian Farms the Smart Way' shows that every rupee spent on agricultural research and development, yields better returns (11.2), compared to returns on every rupee spent on fertilizer subsidy (0.88), power subsidy (0.79), education (0.97) or on roads (1.10).

For sustainable development

- More importantly, the spending on Agri R&D would lead to sustainable development with comparatively more equal distribution of resources.

- According to Shenggen Fan, Director-General of the Washington DC-based International Food Policy Research Institute (IFPRI), agriculture is key to meeting half of the 17 Sustainable Development Goal (SDG) targets set for 2030. These SDG targets include eliminating poverty and hunger and reducing inequalities.

- So, increasing R&D spending on agriculture is not only a vital necessity for ensuring food security, but also important from the socio-economic point of view.

- So, the onus is on the government to increase financial allocation to research and create an enabling environment for private investments.

18. Focus on inflation — on RBI interest rate

Context:

- Based on an assessment of the current and evolving macroeconomic situation, the Monetary Policy Committee (MPC) has decided to keep the policy repo rate under the liquidity adjustment facility (LAF) unchanged at 6.5 per cent.

- The decision to stand pat comes even as the central bank changed its policy stance from "neutral" to "calibrated tightening", indicating that rates could either go up or stay steady in the coming months.

Challenges before RBI:

- It was expected that the RBI would raise rates considering the domestic (rising inflation) and global (raising fuel prices and rupee depreciation) economic scenario.

- Bond yields have been on a steady rise since last year as investors have been spooked by fears over the fiscal deficit and the shift in global interest rates.

- Going forward, the biggest challenge facing the RBI will be the prospect of further rate hikes by the U.S. Federal Reserve and central banks in other developed economies, which could force the central bank to look beyond its inflation mandate.

Inflation targeting:

- The RBI has chosen to stick to its primary mandate of keeping domestic inflation just around 4%, notwithstanding other risks facing the economy.

- Its dedication to strict inflation-targeting was further reiterated during the press conference after the review meeting where RBI officials termed inflation control as their legal mandate.

- With its strict focus on inflation, the challenge now will be whether the RBI can simultaneously manage the various other risks to financial stability.

Effects of RBI decision:

- The rupee weakened past the 74-mark to the U.S. dollar for the first time ever after the news of the RBI holding rates steady hit the markets.

- Stocks, which have been on a downtrend since September, also took a hit on Friday while bond yields fell.

Rationale behind unchanged rates:

- The RBI's decision could be termed prudent, particularly after two consecutive increases since June, it can be perceived as a strategy to keep the powder dry just in case external risks get out of hand.

- The decision to keep rates steady might also work in favour of the government, which will prefer to borrow at cheaper rates in the run-up to the general elections next year.

- The RBI's decision to not raise rates may lift the sentiments of consumers and businesses at a time when the economy enters the busy season and festival demand kicks in.

- The RBI seems to prefer piecemeal measures, such as easing foreign investment norms and mild intervention in the forex market, to address the financial risks posed by the weakening ru

Monetary Policy Framework:

- The Government of India and Reserve Bank of India signed a Monetary Policy Framework Agreement in 2015.

- The objective of monetary policy framework is to primarily maintain price stability, while keeping in mind the objective of growth.

- As per the agreement, RBI would set the policy interest rates and would aim to bring inflation below 6 per cent by January 2016 and within 4 per cent with a band of (+/-) 2 per cent for 2016-17 and all subsequent years.

Monetary Policy Committee (MPC):

- Monetary Policy is announced by MPC which setup has been based on recommendations of Urjit Patel committee.
- MPC consist of six members, 3 from RBI and 3 appointed by the Government.
- Members from RBI are governor of RBI, a deputy governor and one officer of RBI.
- Members from government are appointed on the recommendations of a search cum selection committee headed by cabinet secretary.

Monetary Policy tools:

- **Liquidity Adjustment Facility (LAF):** The LAF consists of overnight as well as term repo auctions.
- The aim of term repo is to help develop the inter-bank term money market, which in turn can set market-based benchmarks for pricing of loans and deposits, and hence improve transmission of monetary policy.
- The Reserve Bank also conducts variable interest rate reverse repo auctions, as necessitated under the market conditions.
- **Repo Rate:** The (fixed) interest rate at which the Reserve Bank provides overnight liquidity to banks against the collateral of government and other approved securities under the liquidity adjustment facility (LAF).
- **Reverse Repo Rate:** The (fixed) interest rate at which the Reserve Bank absorbs liquidity, on an overnight basis, from banks against the collateral of eligible government securities under the LAF.
- **Marginal Standing Facility (MSF):** A facility under which scheduled commercial banks can borrow additional amount of overnight money from the Reserve Bank by dipping into their Statutory Liquidity Ratio (SLR) portfolio up to a limit at a penal rate of interest.
- This provides a safety valve against unanticipated liquidity shocks to the banking system.

Conclusion

- The unstable global economic scenario and further rate hikes by the U.S. Federal Reserve and central banks in other developed economies are going to affect Indian economy.
- The RBI will clearly have to juggle multiple challenges in the coming months.

Geography and Environment

19. Another warning on warming

Context:

- The Intergovernmental Panel on Climate Change (IPCC) has just released a special report on global warming of 1.5°C, over pre-industrial temperatures.

- It provides details on how the global response to climate change needs to be strengthened within the broader context of sustainable development and continuing efforts to eradicate poverty.

- The impacts of 1.5°C of warming and the possible development pathways by which the world could get there are its mains focus.

Background:

- In 2015, at the Paris climate conference, the global community made a pact to pursue efforts to limit warming to within 1.5°C — half a degree below the previous target of 2°C.

- With the increase in extreme events and the very survival of small islands at stake, the lower limit was greeted then with surprise and enthusiasm.

Difference berween1.5°C and 2°C:

- For most people, the difference between 1.5°C and 2°C may seem trivial when daily temperatures fluctuate much more widely. However, the reference here is to global average temperatures.

- Different regions of the earth will warm at different rates. For instance, the Arctic is already experiencing warming that is many times higher than the global average.

- Half a degree of warming makes a world of difference to many species whose chance of survival is significantly reduced at the higher temperature.

- At 1.5°C warming, ocean acidification will be reduced (compared to 2°C warming), with better prospects for marine ecosystems.

- There will likely be less intense and frequent hurricanes, not as intense droughts and heat waves with smaller effects on crops, and the reduced likelihood of an ice-free Arctic in summers.

- Studies conservatively estimate sea levels to rise on average by about 50 cm by 2100 in a 2°C warmer world, 10 cm more than for 1.5°C warming.

- But beyond 2100, the overall assurance of much higher sea level rise is greater in a 2°C world.

- The risks to food security, health, fresh water, human security,

livelihoods and economic growth are already on the rise and will be worse in a 2°C world.

- The number of people exposed to the complex and compounded risks will also increase and the poorest, mostly in Asia and Africa, will suffer the worst impacts.

- Adaptation, or the changes required to withstand the temperature rise, will also be lower at the lower temperature limit.

- The danger of crossing tipping points, or thresholds beyond which the earth's systems are no longer able to stabilise, becomes higher with more warming.

- Such tipping points include melting of Greenland ice, collapse of Antarctic glaciers (which would lead to several metres of sea level rise), destruction of Amazon forests, melting of all the permafrost and so on.

Strategies of IPCC:

The IPCC report identifies two main strategies.

- The first stabilises global temperature around the 1.5°C mark with limited overshoot and the second permits temperatures to exceed 1.5°C temporarily before coming back down.

- The consequences of the temporary overshoot would cause worse impacts than the first approach.

- To limit warming to around 1.5°C with no or limited overshoot, global net carbon dioxide (CO_2) emissions need to decline by about 45% from 2010 levels by 2030 and reach net zero around mid-century.

- In comparison, to limit warming to just below 2°C, the reductions needed are about 20% by 2030 and reach net zero around 2075.

- There are several mitigation pathways illustrated to achieve these reductions and all of them incorporate different levels of CO_2 removal.

- Emissions need to peak early within the next decade or so, and then drop.

- These different methods will themselves involve various risks, costs and trade-offs. But there are also many synergies between achieving mitigation targets and fulfilling Sustainable Development Goals.

- To stay below 1.5°C, the transitions required by energy systems and human societies, in land use, transport, and infrastructure, would have to be rapid and on an unprecedented scale with deep emission reductions.

Challenges ahead

- How is the remaining carbon budget, that is the room available in the atmosphere to safely contain more CO_2, going to be shared among different countries?

- This is a difficult question to address, given the contentious nature of the negotiations.
- For instance, that the U.S. has been obstructionist in the deliberations in Incheon, South Korea, at the recent meeting to determine the final text of the report.
- The U.S. also reiterated its intent to pull out of the Paris Agreement.
- Contributions from the U.S. and other rich countries to the Green Climate Fund and other funding mechanisms for mitigation and adaptation are vital even to reach the goals of the Nationally Determined Contributions (NDCs).
- Even if all the NDCs are implemented, the world is expected to warm by over 3°C.

Conclusion

- Disputes over the implementation of the Paris Agreement at numerous meetings depict the deep divides among rich countries, emerging economies and least developed countries.
- This special report poses options for the global community of nations, which they will have to contend with in Poland — the next Conference of the Parties.
- Each will have to decide whether to play politics on a global scale for one's own interests or to collaborate to protect the world and its ecosystems.

20. Forest fires: most frequent in Northeast, largest affected area is Central

Context:

A joint report by Ministry of Forests, Environment and Climate Change (MoFECC) and World Bank reflects on how forest fires are deterring India's efforts to meet its climate change goals.

About the report:

- The report titled 'Strengthening Forest Fire Management in India' underscores need for comprehensive national policy and guidelines.
- The report discusses policies on forest fire prevention and management (FFPM) at national, state and local levels with national and international best practices in FFPM and need for comprehensive national policy and guidelines.
- It provides recommendations on five broad themes – policy, institutions and capacity, technology, community engagement and data and information.

Findings of the report:

- Though India has managed to increase its forest cover to over 20

percent of its total geographical area, forest fires are still a leading cause of degradation of the forest cover in the country.

- About 70 per cent of the forest area in India experiences forest fire. The report cited an estimate that nearly 49,000 sq km of forests were burnt in 2014.

- Frequency and area of forest fires: In terms of frequency of forest fires, 16 of the top 20 districts are in the Northeast. And in terms of area, almost half of the affected area is in just 20 districts; the largest affected area is in Central India.
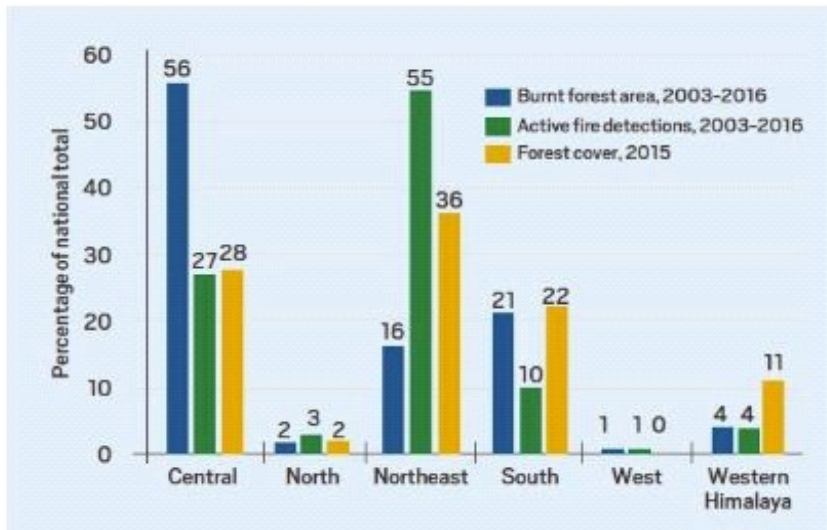
- **Region wise data:** Two-thirds of the country's forest cover is concentrated in two regions, the Northeast accounting for 36% and Central India (28%).

- **District wise data:** The top 20 districts in terms of area affected by fire(2003-2016) account for 48 per cent of the total fire-affected area, the report found. However, these 20 districts account for only 16% of India's forest cover (and 3% of the land area).

- Of the 20 districts, 5 are in Mizoram, 4 in Manipur, 3 in Meghalaya and 2 each in Assam and Tripura. The 4 districts outside the NE are in Maharashtra, Chhattisgarh (2) and Odisha.

- In the Northeast, forest fires tend to be concentrated in a smaller area that is subjected to repeated burning. The peak fire season is most concentrated (shortest) in the Northeast and the Northern state of Bihar. Fires in other regions, particularly districts in Central and Southern India, are more expansive.

- **Regeneration** is either inadequate or absent in about 45 percent of all forest

areas and about 95 percent of all forest plots show some signs of degradation.

Reasons for forest fires:

- **India's monsoons:** Monsoons are largely responsible for the seasonal nature of forest fires in India. The forest fires peak during the dry months of March or April before the arrival of the monsoon, and the fire season mainly occurs during the four-month period between February 15 and May 15.

- **Dry and moist deciduous forest:** Districts experiencing widespread and frequent forest fires include areas of dry and moist deciduous forest in the borderlands of Chhattisgarh, Maharashtra, and Telangana that are affected by fire on a nearly annual basis, according to the report.

- **Shortage of dedicated funding for FFPM:** The **CAG report** in 2017 pointed out that shortages of equipment, accessories and vehicles required for fire-fighting in the fire season ranged from 31 to 100 per cent while shortage of manpower ranged from 16 to 55 per cent in cadres of foresters and forest guards.

- **Meagre budgetary support:** MoEFCC report noted that during massive forest fire of 2016 in Uttarakhand, the state government sanctioned merely ₹ 22 crore, against the demand of ₹ 446 crore made by the state forest department.

- **Institutional disincentives and under-reporting:** According to MoEFCC, the field officers who report large fires may create additional work for themselves and their superiors in filing and prosecuting a forest offense, and the department may receive less financing which leads to under-reporting of forest fires.

- **Collection of non-timber forest products (NTFPs):** Humans cause the greatest number of forest fires, with negligence and the collection of NTFPs in Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha and Telangana being the catalysts.

- **Jhum Fire (for Shifting Cultivation):** Shifting cultivation is the main reason for fire incidents in NE. In central states, harvesting of mahua flowers for making local wine and extraction of tendu leaves for making bidis result in wildfires.

- **Pine:** Pine trees have contributed to forest fires in western Himalayan states. The needles of pine trees can easily catch fire. The worst blazes occurred in areas abundant in pine trees.

Significance of the report:

- The findings of the report are crucial for India's own commitment to create an additional carbon sink of 2.5 to 3 billion tonnes of CO2-equivalent through additional forest and tree cover by 2030.

- According to scientists from National Remote Sensing Centre (NRSC), fires affecting forests have significant ecological value.

- Between 2006 and 2015, NRSC scientists forest fires were detected in just under half (281 of 614) of protected areas in India. In 2014, fires burned about 8.6 % of forest cover in protected areas.

- It is also expected to be key input in issuing National policy on Forest Fire Prevention and Management (FFPM).

- District-level analyses for data from 2003 to 2016 also show that the monsoon can give an early warning of severity of the next year's fire. A district that experiences slightly higher rainfall than its long-term average during the monsoon is likely to experience fewer fires the following year.

Way forward:

- **Aggressive strategy:** Forest fires can be controlled by using an aggressive strategy that includes incentivising communities and forest departments for preventing forest fires.

- **Community sensitisation:** Bring a social movement to prevent forest fires by reporting to the communities the findings of report that are getting impacted by it and apprising them of ways they can adapt to prevent such fires.

21. Tiny spheres can trap water pollutant

Context:

Scientists have created tiny spheres that can catch and destroy bisphenol A (BPA), a synthetic chemical used to make plastics that often contaminates water.
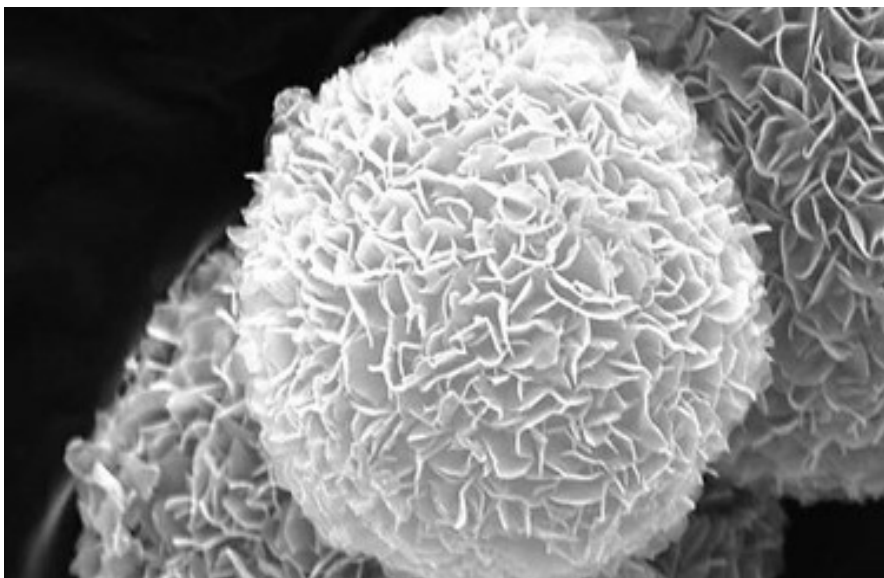
About Bisphenol A (BPA):

- BPA is commonly used to coat the insides of food cans, bottle tops and water supply lines, and was once a component of baby bottles.

- While BPA that seeps into food and drink is considered safe in low doses, prolonged exposure is suspected of affecting the health of children and contributing to high blood pressure.

Research and development:

Scientists at Rice University in the U.S. have developed something akin to the Venus' flytrap of particles for water remediation.

- The micron-sized spheres resemble tiny flower-like collections of titanium dioxide petals.
- The supple petals provide plenty of surface area for researchers to anchor cyclodextrin — a benign sugar-based molecule often used in food and drugs.
- It has a two-faced structure, with a hydrophobic (water-avoiding) cavity and a hydrophilic (water-attracting) outer surface.
- BPA is hydrophobic and naturally attracted to the cavity. Once trapped, reactive oxygen species (ROS) produced by the spheres degrades BPA into harmless chemicals.
- In the lab, the researchers determined that 200 mg of the spheres per litre of contaminated water degraded 90% of BPA in an hour, a process that would take more than twice as long with unenhanced titanium dioxide.
- Most of the processes reported in the literature involve nanoparticles. The size of the particles is less than 100 nanometers. Because of their very small size, they're very difficult to recover from suspension in water.

Measures:

- **Use BPA-free products:** Manufacturers are creating more and more BPA-free products. Look for products labeled as BPA-free. If a product isn't labeled, keep in mind that some, but not all, plastics marked with recycle codes 3 or 7 may be made with BPA.
- **Cut back on cans:** Reduce your use of canned foods since most cans are lined with BPA-containing resin.
- **Avoid heat:** The National Institute of Environmental Health Sciences, part of the National Institutes of Health, advises against microwaving polycarbonate plastics or putting them in the dishwasher, because the plastic may break down over time and allow BPA to leach into foods.
- **Use alternatives:** Use glass, porcelain or stainless steel containers for hot foods and liquids instead of plastic containers.

22. Green Mobility:

Green mobility refers to all those mobility options that emit lower emissions – in terms CO_2 g/km than pure Internal Combustion Engine vehicles – through the use of alternate fuels, drive-train technologies or other measures

- Bio-fuel and Methanol based mobility

- Compressed Natural gas (CNG) based mobility
- Electric and Hybrid Mobility (xEV)
- Hydrogen energy and fuel cell based mobility

Benefits from Green Vehicle

Reduce India's oil dependency:

- The shift from petrol and diesel fuelled vehicles will reduce India's dependence on oil and the cost of import.
- NITI Aayog has estimated that India can save up to ₹ 4 lakh crore by rapidly adopting EVs.

Address the issues of climate change:

- Electric Vehicles would reduce vehicular emissions and will address the issue of air pollution as well as be an end-to-end solution to address the issues of climate change by cutting down greenhouse emissions.
- India can save 64% of energy demand from the road sector for passenger mobility and 37% of carbon emissions in 2030

Job creation:

- The Government will help establish charging stations to start with and later through franchisee model, create jobs for lakh of entrepreneurs to establish charging stations across the country.

Cheaper in price:

- The electric vehicles will be cheaper and the operating costs will also reduce, which will be an economic incentive for the public to buy the same.

Safety improvements

- Recent findings have shown that several EV features can improve safety. EVs tend to have a lower centre of gravity that makes them less likely to roll over.
- They can also have a lower risk for major fires or explosions and the body construction and durability of EVs may make them safer in a collision

Tax Breaks

- The central government and some states offer tax credits and deductions for driving green vehicles, which will further reduce the cost of buying such a vehicle

Challenges in adopting green vehicles in India:

1. **Lack of clarity on Government strategy for green mobility**: The Draft National Auto Policy highlights that Policies and announcements by different government ministries and supporting bodies in the recent past are not aligned on the green technologies

2. **Low demand:** Large-scale adoption of green mobility options is limited by consumer concerns regarding technical performance of vehicles, reliability and dependability, limitation on range and refueling options, higher upfront costs etc

3. **Limited Infrastructure:** Current public infrastructure for Electric Vehicles is limited to cities and selected clusters.

4. **Limited supply of vehicles and components:** Manufacturing capacity in India for electric vehicles is much lower than that of USA and China.

5. **Funding constraints:** There are financial limitations in the automobile industry. Electric vehicles have high initial capital cost. For example: Batteries for electric vehicles are 40-50% more expensive than regular ones and India is dependent on imports from China

FAME I (Faster Adoption and Manufacturing of (hybrid &) Electric vehicles in India) :

- The objective of the scheme to support the hybrid or electric vehicles market development and its manufacturing eco-system in the country in order to achieve self-sustenance in stipulated period.

- It also seeks to provide demand incentives to electric and hybrid vehicles from two-wheeler to buses.

FAME II scheme:

- It was scheduled to be launched at the inaugural session of "MOVE"- a global mobility summit in September 2018 but put on hold. There is a shift in the government direction.

- Rather than spreading it to a pan-India basis, the government now wants to concentrate on creating pilot projects in populated and polluted cities that have a large vehicle base for easy transition. Also, the programme needs to give time to automakers

National Electric Mobility Mission Plan (NEMMP) 2020:

- The National Electric Mobility Mission Plan 2020 was unveiled in 2013 considering the environmental pollution and need for fuel security in the country, with an aim to promote electric mobility in the country.

- It has an ambitious target of achieving sales of six to seven million electric and hybrid electric vehicles every year beginning from 2020.

- It intends to achieve about 9500 million litres of cumulative fuel savings, which would result in the reduction of emission of Greenhouse Gasses and pollution of 2 million tonnes.

Way forward:

India should reduce dependence on imports for electric vehicles and components by developing the domestic supply eco-system. There is a need to improve infrastructure facility- Better charging facilities, efficient

electric transmission infrastructure. State and city-level players need to be involved so as to address several technical and infrastructural needs. Automotive industry, government and various stakeholders need to collaborate and invest for achieving India's target for green mobility

23. India faces threat of deadly heat waves: UN report

Context:

Recently, IPCC panel study prescribes 'large-scale changes' to keep the rise in global temperature below 1.5°C.

Intergovernmental Panel on Climate Change (IPCC):

- The report stated that capping the rise in temperature to 1.5 degrees Celsius would require "rapid and far-reaching" transitions in land, energy, industry, buildings, transport and cities.

- If the average global temperature rises by more than one degree Celsius from the present, India could "annually" expect conditions like the 2015 heat wave that killed at least 2,000, according to the 'Special Report on Global Warming of 1.5°C,' commissioned by the Intergovernmental Panel on Climate Change (IPCC).

- The global net human-caused emissions of carbon dioxide (CO_2) would need to fall by about 45% from 2010 levels by 2030, reaching 'net zero' around 2050. This means any remaining emissions would need to be balanced by removing CO_2 from the air.

Boiling point

The rise in average global temperature by more than 1.5 °C is inevitable soon unless measures to cut CO_2 emissions are not undertaken, a IPCC report says
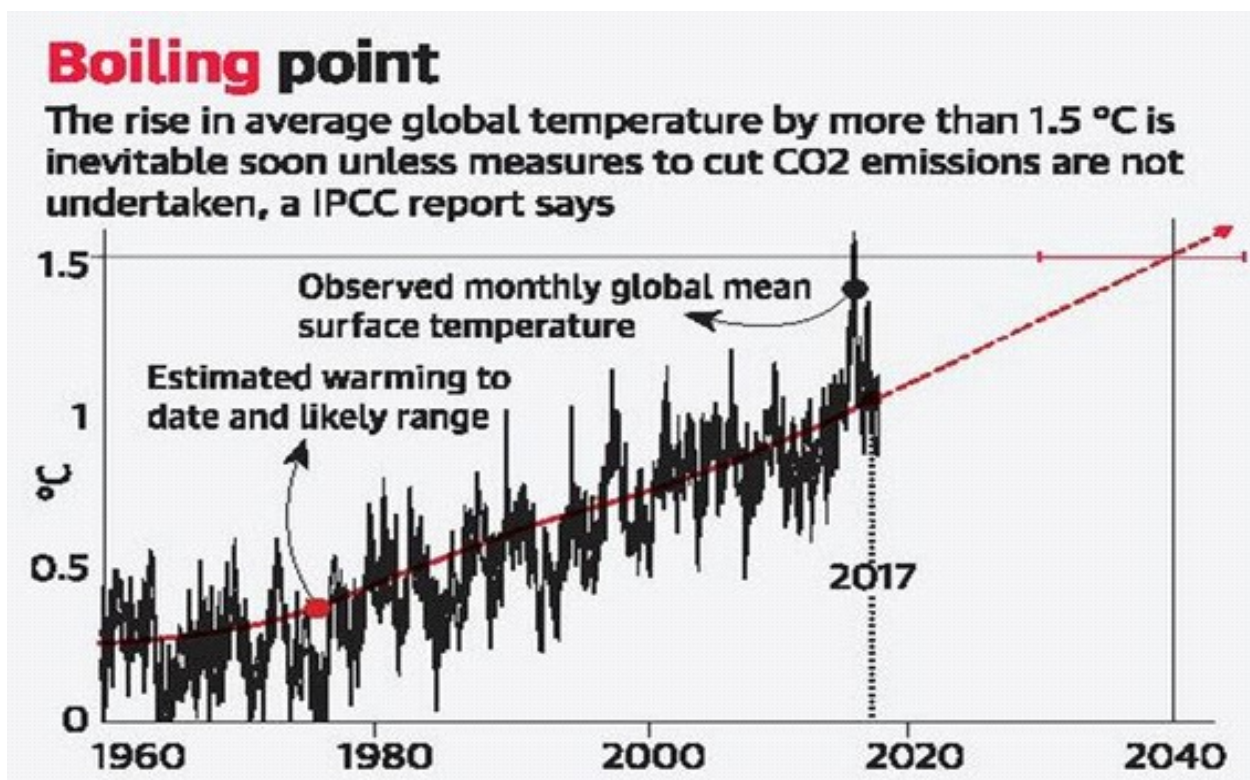
About IPCC:

The Intergovernmental Panel on Climate Change (IPCC) was established in 1988 by the World Meteorological Organization (WMO) and the United

Nations Environment Programme (UNEP) to assess climate change based on the latest science. IPCC reports cover "the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts and options for adaptation and mitigation.The IPCC assesses research on climate change and synthesises it into major 'assessment' reports every 5–7 years.

U.S rejected IPCC:

The IPCC's report was accepted by all countries, including India. Though the United States, which moved to withdraw from the Paris Agreement, too accepted the report, it has not endorsed it.

"By refusing to endorse the findings of the IPCC's 1.5^0C report, the US has again given again given a clear signal that it would continue with its climate regressive agenda, which includes obstructing the work of the UNFCCC and promoting fossil fuels like coal and gas.

Way forward:

Limiting global warming to 1.5°C, compared with 2°C, would reduce challenging impacts on ecosystems, human health and well-being, making it easier to achieve the United Nations Sustainable Development Goals.

24. Odisha, Andhra on red alert as cyclone Titli inches close

Why in news:

- India Meteorological Department (IMD) issued red alert to Odisha and Andhra.
- It said the deep depression over the Bay of Bengal has intensified into cyclonic storm 'Titli' and is moving towards the Odisha-Andhra Pradesh coast.

Important facts:

- Earlier, Cyclone Mekunu had hit parts of coastal Karnataka, Mangalore and Udupi.
- 'Mekunu' is a Maldivian name as it is located to the northwest of Maldives and west of Lakshadweep.
- The Indian Ocean is an active zone at present and is throwing in a number of disturbances. Moreover, a Cyclone named Luban, the first of the Post Monsoon season had already developed over the Arabian Sea.
- The deep depression over the Bay of Bengal intensified into cyclonic storm Titli and is moving towards the Odisha-Andhra Pradesh coast.
- This severe cyclonic storm is expected to move west-northward and make landfall between Gopalpur in south Odisha and Kalingapatnam in Andhra Pradesh by October 11 morning.

- According to India Meteorological Department (IMD) this severe cyclonic storm is expected to have a wind speed of 100 to 110 km/hr with gusts of up to 125 km/hr during the landfall on Odisha's coast.

- Precautionary measures by state government:

- The Odisha government announced the closure of all schools and colleges from Wednesday in four districts of the state as a precautionary measure.

- The vulnerable areas are being identified and people of these areas are being evacuated to safe multi-purpose shelters as a precautionary measure to minimize loss of life and property.

- It has also set a target of "zero casualty". The state has put the districts on high alert and asked the authorities to evacuate those living in low-lying areas and in 'kuchha' houses along the coast.

25. A flower awaits its place under the sun

Why in news:

- For farmers frustrated by the vagaries of monsoon, **Tamil Nadu's State flower, Gloriosa superba** is a gold mine waiting to be exploited.

- The plant, which contains 24 types of alkaloids (nitrogenous organic compounds) and 10 non-alkaloidal medicinal compounds, is widely used in native medicinal compositions and in the treatment of gout and as a pain killer in allopathic medicine.

- Its cultivation, though confined to a few pockets in Tamil Nadu, has started to spread in the recent years.

The story of cultivation:

- The cultivation of Gloriosa superba by farmers is an interesting story.

- P. Rajendran, a farmer from Sivakasi, who stumbled upon a tuber in his farm in 1970, about which he was clueless, sent it to the Tropical Products Institute, London, for analysis.

- There it was confirmed that this was a plant whose extract was used by the pharmaceutical industry.

- A few months later, he came across a tall plant near Oddanchatram in Dindigul district in the wild.

- When an Italian pharmaceutical company offered to buy Gloriosa tuber for [1] 250 a kg in 1972, he started to grow the plant under contract farming in several places of Dindigul and the present Tirupur districts.

- In 1980, its export was banned as Gloriosa entered the list of endangered species. The same year, export was allowed only for seeds cultivated in farms.

- Enthused by the returns, more farmers took to its cultivation. It is now grown in a few thousands of acres in Dindigul and Tirupur districts among others.
- The average per acre yield is 100 kg but there are farmers who reap 500 kg of seeds. The price has also gone up from ₹ 250 a kg 30 years ago to ₹ 3,430 now.

Challenges and concerns:

- A major problem in the cultivation of this species is pollination. The peculiar structure of the flower impedes pollination rate.
- Rajendran has come up with a novel method to tackle this by resorting to 'touch pollination' or manual pollination of implanting pollen grains.
- The other problem is the high cost of raising the plant. But the returns are huge as there is no need to plant it again and again.
- Tamil Nadu farmers contribute the major share of global consumption of 800 to 1,000 tonnes per annum and the demand goes up by 10 to 15% every year.
- Even in the absence of proper marketing facility for Gloriosa, this is the only produce for which the farmer can decide the price.

Science and Technology

26. Defence Ministry gives in-principle nod for 31 projects under 'Make-II scheme'

Context:

The Department of Defence Production under the Ministry of Defence has cleared 31 projects and has given them in-principle approval under the Make-II scheme.

Make-II scheme:

- Make-II is an industry-funded scheme. It offers easier clearance and faster scaling-up of production. Make-II has seen faster development than any of the 'Make projects' that have happened so far.

- It aims encourage participation of private sector in defence design and production and give boost to 'Make in India' programme in Defence Sector.

- Make II procedure prescribes guidelines to develop and manufacture defence equipment through Indian industry.

- It will now allow Defence Ministry to accept suo motu proposals from industry and also allow start-ups to develop equipment for armed forces.

SPARK:

- SPARK (Support for Prototype & Research Kick-start) it's another scheme that — supports development of prototypes after selection under various programmes.

- Funds up to [1] 1.5 crore per project funded and handheld by iDEX (Innovations for Defence Excellence).

- Here the money is disbursed in a phased manner with milestone achievements

On indigenisation:

- Indigenization is the act of making something more native; transformation of some service, idea, etc. to suit a local culture, especially through the use of more indigenous people in administration, employment, etc

- We at the macro level are still playing catch-up. We import technology and try to indigenise it. But, by the time we indigenise, new products have already come.

- We need to change the mindset and go for total indigenisation.

Way forward:

iDEX has identified 11 areas to get new ideas and solutions to speed up productions — protection system with inbuilt sensors, see-through armour,

active protection system, and secure hardware based offline encryption device, advanced technology- based desalination system and bilge oily water system etc.

Defence challenges are being held in multiple cities with the partnership of Forge, T-Hub, IIM-Ahmadabad, IIT-Madras and Bombay to identify start-ups to work for the defence sector.

27. Swine flu

What is swine flu?

Swine influenza, also called pig influenza, swine flu, hog flu and pig flu, is an infection caused by any one of several types of swine influenza viruses. Swine influenza virus (SIV) or swine-origin influenza virus (S-OIV) is any strain of the influenza family of viruses that is endemic in pigs.

A respiratory disease caused by a strain of the influenza type A virus known as H1N1.

- The illness is originally known to affect pigs. It is known to have spread to humans who came in direct contact with pigs. However, the new virus or the mutated type of virus that has emerged over the years has the ability to affect humans without direct contact with pigs.
- The virus is transmitted from person to person through the same medium as other flu viruses.
- A healthy person may acquire the infection by inhaling droplets expelled by the infected person while coughing or sneezing or by contacting surfaces infected with the virus. The virus is not transmitted directly by eating cooked pork.

What are the Symptoms of Swine Flu?

The symptoms of swine flu are very similar to regular flu and include: Fever; Headaches; Tiredness; Chills; Cough and sneezing; Headache; Weakness and fatigue; Aching muscles and joints; Sore throat; Runny nose; Diarrhoea or stomach upset and Loss of appetite.

Why India is more vulnerable to swine flu?

India is even more vulnerable because of its climate. While in most countries the swine flu virus makes an appearance during the winter season, in India it surfaces twice a year – during the monsoon and winter seasons. Add to that the fact, that our population density is very high, public places and transport is overcrowded and there's utter disregard for sanitation and hygiene. There's also a lack of awareness about the disease and many people still believe that virus spreads from pigs. The swine flu situation actually points out the deficiencies of India's public health system.

Preventive measures:

- Wear a proper surgical mask during flu season because the number of cases shoots up during the summers and monsoon seasons.

- Always cover your face while coughing or sneezing. Ensure others around you also follow the same practice, especially if they're down with cold.

- Always wash your handsbefore and after eating and particularly after returning from a public place.

- Remember the virus can also spread through droplets that have settled on surfaces so avoid touching them if you're around a person who has flu like symptoms.

- Avoid visiting unhygienic places or using public restrooms.

- If you develop flu like symptoms or even feel sick, stay at home and take enough rest. Keeping away from others to prevent the spread of the infection.

- Drinking lots of warm water and fluids wash off the virus into the stomach where they cannot survive.

Way forward:

The public should take care to seek professional care if mild influenza, cough, cold with fever or respiratory distress do not subside in a reasonable time. A range of administrative policies and practices can be used to minimize influenza exposures before arrival, upon arrival, and throughout the duration of the visit to the healthcare setting. Measures include screening and triage of symptomatic patients and implementation of respiratory hygiene and cough etiquette.

28. More global R&D is needed to tackle TB

Context: Recently, Tuberculosis (TB) has drawn unprecedented. A growing sense of urgency in dealing with this global threat made the United Nations (UN) schedule its first-ever high-level meeting on TB in New York on 26 September.

UN's first-ever high-level meeting on TB:

- The meeting offered participating nations the potential to energize the discourse on TB and chart a roadmap for global action on TB.

- One of the major discussion points focused on accelerating research and development (R&D) efforts to end TB.

Tuberculosis (TB):

Tuberculosis (TB) is a potentially serious infectious disease that mainly affects your lungs. The bacteria that cause tuberculosis are spread from one person to another through tiny droplets released into the air via coughs and sneezes.

Advances in science and technology:

- Contributed significantly towards the longevity and improved quality of people's lives.

- The discovery of antimicrobial therapy.
- The introduction of vaccines.
- The increased ability to identify infectious organisms have enabled countries to control the spread of communicable diseases such as cholera, plague, and leprosy.

The importance of continued scientific innovation as we progress towards achieving the sustainable development goals cannot be overemphasized. This is particularly relevant for TB, a disease that continues to kill more than 1.3 million people globally every year. While some countries have reduced their TB burden, the overall global progress against the disease has been slow.

India's measures to reduce TB:

- India has established the India TB Research Consortium (ITRC).
- ITRC has raised the profile of TB research, attracted investments in TB product development and conducted several validation studies on new TB tools.
- The Indian Council of Medical Research (ICMR) has also recently taken steps to initiate trials for two new TB vaccine candidates. Thus, in the last few years, India has made considerable progress in advancing TB research.
- Similar individual efforts have been made by other countries as well. However, our progress against TB would be far more successful through greater inter-country collaboration

Way forward:

- We also need to focus more research efforts on developing biomarkers to determine those who are predisposed to develop active TB among the close contacts of TB patients so that efficient preventive therapy can be provided.
- Shorter and more efficient anti-TB regimens need to be developed to improve the adherence to treatment and decrease the failure and relapse rates. Research for the prevention of transmission of drug sensitive and drug resistant tuberculosis in the healthcare setting is critical.
- In the age of globalization, the containment of an infectious disease like TB within borders poses a considerable challenge, which is why eliminating the disease is a pressing global priority.
- The recently concluded meeting saw the endorsement of a political declaration that underscored the criticality of research in our common goal of eliminating TB.
- Hopefully, this will act as a starting point for countries' efforts to advance future TB research—with those efforts built on the

foundations of a collaborative spirit and a willingness to share individual strengths.

29. Upgraded MiG-29 adds to air power

Context:

The Indian Air Force's beast — MiG-29 — has gained in strength and ferocity after an upgrade, giving the force, battling a shortage of fighter aircraft, a much-needed boost

About MiG-29:

- The Mikoyan MiG-29 (NATO reporting name: Fulcrum) is a twin-engine jet fighter aircraft. It was developed by the Mikoyan design bureau in the Soviet Union in 1970s.

- It was designed to counter new US fighters such as General Dynamics F-16 Fighting Falcon and McDonnell Douglas F-15 Eagle. It had entered service with Soviet Air Force in 1982.

- To date, more than 1,600 MiG-29s of various modifications have been built. More than jets of the MiG-29s type have been exported by Russia to some 30 countries including India.

Boost to fire power

A look at the refurbished MIG-29 aircraft's new features

- Mid-air refuelling facility that increases its range
- Ability to launch latest missiles and multi-dimensional attacks
- Capability to take off vertically
- Take off possible within 5 minutes of spotting a hostile jet
- Glass cockpit with 'Multi-Functional Display' screens

With the upgraded version, the range of aircraft has improved a lot. Moreover, in the legacy aircraft, we were restricted to the certain dimension, but we can now do air-to-air, air-to-ground and anti-shipping operations

A MIG PILOT

Features of upgraded version:

- The Russian-origin aircraft, now capable of effecting mid-air refueling, is compatible with latest missiles and can launch multi-dimensional attacks.

- The upgraded MiG-29 aircraft could take off within five minutes of spotting a hostile jet trying to enter the Indian airspace and destroy it

- With air-to-air refueling feature, the upgraded MiG-29 can cover larger distance as compared to the previous aircraft and destroy the enemy

Critical role:

- Even in the previous 'legacy version', the aircraft played an important role as the IAF stamped its supremacy over the Pakistani force during the Kargil War of 1999.
- With the upgrade, as compared to the previous 'legacy version' of the MiG-29 bought under emergency clause in early 1980s, the fighter jets are capable to give a befitting response
- IAF chief, Air Chief Marshal B.S. Dhanoa, had said the force was reeling under a severe shortage of fighter aircraft. He had said the force currently had 31 squadrons of fighter jets against the sanctioned strength of 42 squadrons.
- The IAF has three squadrons of MiG-29 fighter jets in operation, two of them at the Adampur Air Force Station. One squadron comprises 16-18 aircraft.
- The strategically important Adampur Air Force Station, which is around 100 km from Pakistan and 250 km away from China borders, is now equipped with upgraded MiG-29.

30. World Alzheimer's Day 2018

Context:

September 21 is observed as World Alzheimer's Day. In order to raise more awareness about Alzheimer's disease, health coach Luke Coutinho talks about its most common causes and preventive measures.

World Alzheimer's Day 2018:

- The day is meant to specifically raise awareness about Alzheimer's disease, which is affecting over 27 million across the world.
- Alzheimer's is a degenerative disease, a kind of dementia.
- Conditions like Alzheimer's don't happen overnight. It develops over the years as a consequence of sedentary lifestyle, lack of exercise and proper nutrition.

How Alzheimer's disease develops?

The brain is made up of around billion neurons, which are constantly communicating for all bodily functions. These neurons require nutrition from the food that you eat and oxygen from the air that you breathe. Deficiency of either oxygen or nutrients results in a buildup of plaque. This plaque interferes with the communication of neurons. Alzheimer's increases this build-up of plaque and thus affect every little function that you otherwise perform normally.

Causes for Alzheimer's:

1. **Medication:** Excessive of use some of these medications can be harmful for the body. This is because almost all medicines have some kind of

side effect as well. Some of these side effects can lead to development of Alzheimer's, dementia and Parkinson's disease in future.

2. **Hidden ingredients:** Hidden ingredients in processed and packaged food can be very harmful for the body. Processed foods are loaded with chemicals and harmful ingredients which excite neurons in the brain and cause conditions like Alzheimer's and even ADHD in children.

3. **Nutritional deficiency:** Deficiency of Vitamin B12 is commonly found in most patients with Alzheimer's disease. Other deficiencies which increase risk of Alzheimer's are that of Vitamin D3, zinc, selenium, etc.

4. **Lack of exercise:** It is through exercise that the nutrients from the food that you eat get transported to the brain for the neurons to work properly. Exercise improves blood circulation and carries oxygen and nutrients to every single cell in the body.

5. **Depression**: Feelings of depression, emotional anxiety and loneliness can all increase risks of Alzheimer's disease.

6. **Exposure to heavy metals:** Breathing air polluted with heavy metals, or eating fish which is adulterated with such toxic metals can increase risks of Alzheimer's.

7. **Diabetes:** Alzheimer's is now often addressed as Type 3 diabetes. This is because cells in the brain get insulin resistant.

8. **Traditional foods:** Foods like good fats, turmeric, omega-3 fatty acids and anti-inflammatory foods are all good for the brain and must be a part of your diet. Also, it is important to maintain proper gut health in order to have a healthy brain.

9. **Music therapy:** Listening to the right kind of music helps in keeping the neurons stimulated and prevents Alzheimer's disease.

10. **Sleep**: Good sleep is extremely important for keeping your brain healthy. Sleeping produces melatonin which has positive impact on your neurons. Sleep is when your neurons eliminate waste. People who retire, they should do something which keeps their mind busy.

11. **Intimacy:** Human touch creates oxytocin - also known as the cuddle hormone. Intimacy has a positive effect on neurons and helps in preventing Alzheimer's disease.

Preventive measures for Alzheimer's:

- Consumption of processed, packaged and junk food must be done responsibly and in limited portions.

- Eating a balanced diet which includes a healthy mix of all major food groups is important to prevent Alzheimer's disease.

- Exercising regularly is important to prevent Alzheimer's disease.

- Happiness is a drug, it is our birthright to be happy. Work on your emotional health to prevent Alzheimer's disease.
- Avoid exposure to polluted air, especially factory waste.
- People with diabetes should take utmost care of managing their health condition. Along with taking medicines, efforts need to be made to minimise insulin resistance and work towards achieving better health.
- Stay away from fad diets as they work on the basis of eliminating certain food groups and may result in certain deficiencies in the body.
- It is important to constantly involve yourself in activities which make you think, challenge and engage your brain.
- Good sleep is extremely important for keeping your brain healthy.
- Intimacy in a safe and respectful way is important for good health.

Though this may not be true, a greatest risk factor for Alzheimer's disease is increasing age. This is evident by majority of Alzheimer's patients being 65 years or older. This doesn't completely classify the disease as an elderly disease.
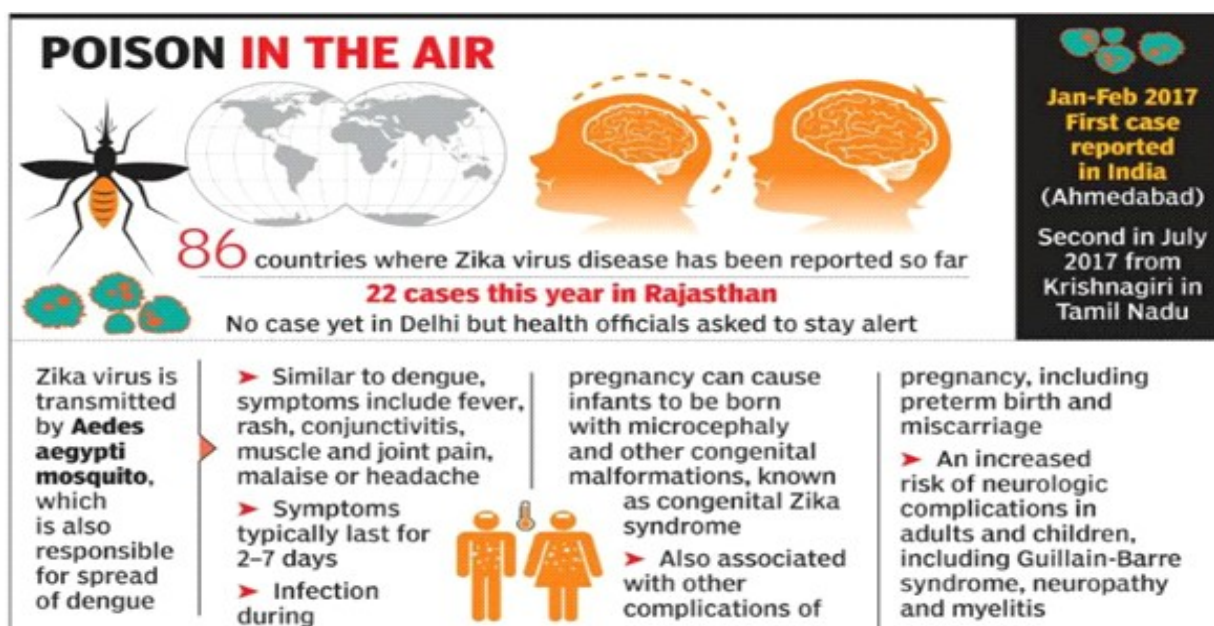
31. Zika Virus

Context:

After Jaipur in Rajasthan recorded 22 confirmed cases of Zika virus the government has put neighbouring states on high alert

Zika Virus:

- Zika is a mosquito-borne disease transmitted by Aedes mosquitoes. The disease is currently being reported by 86 countries worldwide.
- Symptoms of Zika virus disease are similar to other viral infections such as dengue, which include fever, skin rashes, conjunctivitis, muscle and joint pain and headache.

POISON IN THE AIR

Jan-Feb 2017 First case reported in India (Ahmedabad)

Second in July 2017 from Krishnagiri in Tamil Nadu

86 countries where Zika virus disease has been reported so far

22 cases this year in Rajasthan
No case yet in Delhi but health officials asked to stay alert

Zika virus is transmitted by **Aedes aegypti mosquito**, which is also responsible for spread of dengue

- Similar to dengue, symptoms include fever, rash, conjunctivitis, muscle and joint pain, malaise or headache
- Symptoms typically last for 2–7 days
- Infection during pregnancy can cause infants to be born with microcephaly and other congenital malformations, known as congenital Zika syndrome
- Also associated with other complications of pregnancy, including preterm birth and miscarriage
- An increased risk of neurologic complications in adults and children, including Guillain-Barre syndrome, neuropathy and myelitis

- In India, the first outbreak was reported in Ahmedabad in January-February 2017. The second outbreak was reported after five months in the Krishnagiri district in Tamil Nadu. Both were successfully contained through intensive surveillance and vector management.
- The disease continues to be on surveillance radars of the Union health ministry although it is no longer a public health emergency of international concern, according to World Health Organization notification of 18 November, 2016.

Artificial intelligence in the diagnosis of Zika virus:

- Scientists have developed an artificial intelligence system that can accurately diagnose Zika virus and several other viral, bacterial and even genetic diseases from the patient's blood.
- The platform developed by scientists at the University of Campinas (UNICAMP) in Brazil, can identify tens of thousands of molecules present in blood serum, with an artificial intelligence algorithm.
- One of the main advantages is that the method doesn't lose sensitivity even if the virus mutates
- It has the capacity to identify positive cases of Zika even in blood serum analysed 30 days after the start of infection, when the acute phase of the disease is over.
- None of the currently available diagnostic kits has the sensitivity to detect infection by Zika after the end of the acute phase. This method could be useful to analyse transfusion blood bags

Way forward:

The best protection from Zika virus is preventing mosquito bites. Preventing mosquito bites will protect people from Zika virus, as well as other diseases that are transmitted by mosquitoes such as dengue, chikungunya and yellow fever.

Miscellaneous

32. 100% organic Sikkim shortlisted for FAO s Future Policy Award

Why in news?

- Organic Sikkim on shortlist for FAO prize
- Sikkim's achievement in becoming the world's first totally organic agriculture State in India has won it a place on the shortlist of the UN Food and Agriculture Organisation's (FAO) Future Policy Award
- The FAO said that the award would celebrate policies that create enabling environments for sustainable agriculture

Food and Agricultural Organisation:

- FAO is specialised agency of the United Nations that leads international efforts to defeat hunger. Its parent organization is UN Economic and Social Council (UNESC).
- It is neutral forum serving both developed and developing countries where all nations meet as equals to negotiate agreements and debate policy.
- It was established on 16 October 1945 and its headquarters are in Rome, Italy. Its motto is "Let there be bread".
- It has 194 member states, along with the European Union (member organization) FAO meet the demands posed by major global trends in agricultural development and challenges faced by member nations.
- It helps countries in transition modernize and improve agriculture, forestry and fisheries practices, ensuring good nutrition and food security for all.

International Day of Girl Child being observed on 11 October

Why In news:

- International Day of the Girl Child is being celebrated today.
- The theme of this year's International Day of Girl Child is **'With Her: A Skilled Girl Force'**.
- The day is celebrated annually on 11 October.
- The main aims of the day are to promote girl's empowerment and fulfilment of their human rights while also highlighting the challenges that girls all over the world face.

PM unveils statue of Sir Chhotu Ram in Sonipat, Haryana

Why In news:

- PM unveiled the statue of farmer leader Sir Chhotu Ram.

About Sir Chhotu Ram

- Rai Richhpal better known as Sir Chhoturam was born on 24 November 1881 in a small village called Sampala in Rohtak.

- This great personality was a Messiah for farmers. He not only fought for the country's independence in the Quit India movement, but also for the rights of farmers.

- He played an instrumental role in empowering farmers during British rule and laid the foundation stone of a Railway Refurbishing Factory in Rohtak.

- He also played a huge role in motivating youngsters to join the forces during the first world war. Inspired by Mahatma Gandhi, he led several movements against the British rule. In 1937 he became the Revenue minister of Punjab province.

33. Noble Prize (2018)

Alfred Nobel (1833–1896), was a Swedish chemist and engineer who invented dynamite. On 27 November 1895, he signed his last will and testament, giving the largest share of his fortune to a series of prizes in Physics, Chemistry, Physiology or Medicine, Literature and Peace - the Nobel Prizes. The Nobel Prize distribution was first done on 1901 on the fifth anniversary of his death. The prize in economics, however, was established in 1968 by Riksbank, the Swedish bank, in honour of its 300th anniversary. Stockholm's Royal Swedish Academy of Sciences administers the award in physics and chemistry, the Royal Caroline Medical Institute awards the prize in physiology or medicine, and the Swedish Academy oversees the prize in literature. The Norwegian Storting, or parliament, awards the peace prize.

S. No.	Field	Winner	Description
1.	Physiology or Medicine	James P Allison (USA) and Tasaku Honjo (Japan)	"for their discovery of cancer therapy by inhibition of negative immune regulation"
2.	Physics	Arthur Ashkin (USA), Gerard Mourou (France) and Donna Strickland (Canada)	"for groundbreaking inventions in the field of laser physics"
3.	Chemistry	(a) one half to Frances H. Arnold (USA) (b) other half jointly to George P. Smith (USA) and Sir Gregory P. Winter (UK)	(a) "for the directed evolution of enzymes" (b) "for the phage display of peptides and antibodies"
4.	Peace	Denis Mukwege (Congo) and Nadia Murad (Iraq)	"for their efforts to end the use of sexual violence as a weapon of war and armed conflict"
5.	Economic Sciences	(a) William D. Nordhaus (USA) (b) Paul M. Romer (USA)	(a) "for integrating climate change into long-run macroeconomic analysis" (b) "for integrating technological innovations into long-run macroeconomic analysis."

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OUR RESULTS - 2017

62	83	100	105
Fathima Zeba	Srivastava	Mourya	Mishra
HT No : 786820	HT No : 29379	HT No : 255748	HT No : 262146

144	149	187	295	296	360	412	417
474	480	548	614	673	713	726	758
761	765	768	769	828	832	872	886

Abhyasa Program Structure

	Multiple Choice Questions (PRELIMS)	Descriptive Questions (MAINS)	Total Marks
Daily Test	10 (10*1 = 10 marks)	1 (1*10 = 10 Marks)	20
Weekly Test	20 (20*1 = 20 marks)	2 (2*10 = 20 Marks)	40
Fortnightly Test	30 (30*1 = 30 marks)	3 (3*10 = 30 Marks)	60
Monthly Test	50 (50*1 = 50 marks)	5 (5*10 = 50 Marks)	100
3 Months Test	100 (100*1 = 100 marks)	10 (10*10 = 100 Marks)	200
Total Questions	4250+	500+	