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SEVEN IMPORTANT ISSUES

I. UNCLE SAM'S NEW POWERPLAY IN IRAN

Why in News?

"The Iran Deal was one of the worst and most one-sided transactions the United States has ever entered." — U.S. President Trump, May 8, 2018

US President Donald Trump scrapped the Iran nuclear deal signed by his predecessor Barack Obama. The 2015 deal with Iran ended its economic isolation from the rest of the world, including from India, which has since boosted ties with Tehran.

Under the terms of the Iran nuclear deal signed by the Obama administration in 2015, Iran had agreed to limit its sensitive nuclear activities, and in turn was allowed, among other things, to sell oil in the international market. The Trump administration has now pulled out of the deal unilaterally, citing that the agreement was not stringent enough to deter Iran from pursuing hostile nuclear development. Also, the US has threatened to impose fresh and powerful sanctions on Iran, hoping that economic pain would compel Iran to restrain notorious non-compliance.

The Back Story

The United States, the United Kingdom, France, Russia, China, Germany and the European Union formed a political commitment with Iran in Geneva on July 14, 2015. The Joint Comprehensive Plan of Action, (JCPOA), known as the Iran deal, was neither a treaty nor approved by Congress (U.S. Parliament).

In exchange for Tehran agreeing to limit its nuclear capabilities, economic sanctions would be lifted. But the devil is in the details concerning a role for missiles on the nuclear side of and state sponsorship of terrorism on the sanctions relief side. President Obama front-loaded sanctions reprieve, so Iran received relief upfront, while compliance was to come later.

Although many countries have nuclear programs and at least eight possessed nuclear weapons when the nuclear deal with Iran came into force, it is so different that Tehran was singled out for sanctions by the UN, EU and the USA. Why? Iran hid uranium enrichment facilities for almost two decades, in breach of the Nuclear Non-Proliferation Treaty (NPT).

The story behind the story is that Iran is not a normal state, rather, it is a revolutionary country. And Iran places continuation of the Islamic Revolution of 1979 as its top priority, at the expense of adhering to agreements. So, Iran cheats and only retreats temporarily and resumes cheating again, soonest. Henry Kissinger (American Political Scientist) is fond of saying Iran has yet to decide if it is a country or a cause — a normal state, or a revolutionary one. Of course, Tehran acts like an ordinary one, with embassies abroad and suave diplomats who represent the state. But, the "Guardians of the Revolution," the Islamic Revolutionary Guard Corps, (IRGC) are the real state, because the IRGC holds the hard power in alignment with the supreme

leader and they leave the soft power to the President, Foreign Minister and the Parliament.

Iran Nuclear Agreement Review Act (INARA) of 2015

Originally drafted to restrain Obama, INARA now operates to box-in Trump. Under INARA, which was passed to put additional oversight on the 2015 JCPOA, there were 90 days until each deadline for Trump to certify Iran's compliance to Congress.

At the time of the agreement, then-US President Barack Obama's administration expressed confidence that the JCPOA would prevent Iran from building a nuclear programme in secret. Iran, it said, had committed to "extraordinary and robust monitoring, verification and inspection".

Inspectors from the International Atomic Energy Agency (IAEA), the global nuclear watchdog, continuously monitor Iran's declared nuclear sites and also verify that no fissile material is moved covertly to a secret location to build a bomb.

Iran also agreed to implement the Additional Protocol to their IAEA Safeguards Agreement, which allows inspectors to access any site anywhere in the country they deem suspicious.

Until 2031, Iran will have 24 days to comply with any IAEA access request. If it refuses, an eight-member Joint Commission-including Iran-will rule on the issue. It can decide on punitive steps, including the reimposition of

sanctions. A majority vote by the commission suffices.

Joint Comprehensive Plan of Action (JCPA)

In 2015, Iran agreed a long-term deal on its nuclear programme with the P5+1 group of world powers - the US, the UK, France, China, Russia and Germany.

It came after years of tension over Iran's alleged efforts to develop a nuclear weapon. Iran insisted that its nuclear programme was entirely peaceful, but the international community did not believe that.

Under the accord, Iran agreed to limit its sensitive nuclear activities and allow in international inspectors in return for the lifting of crippling economic sanctions.

Here are some of the sanctions:

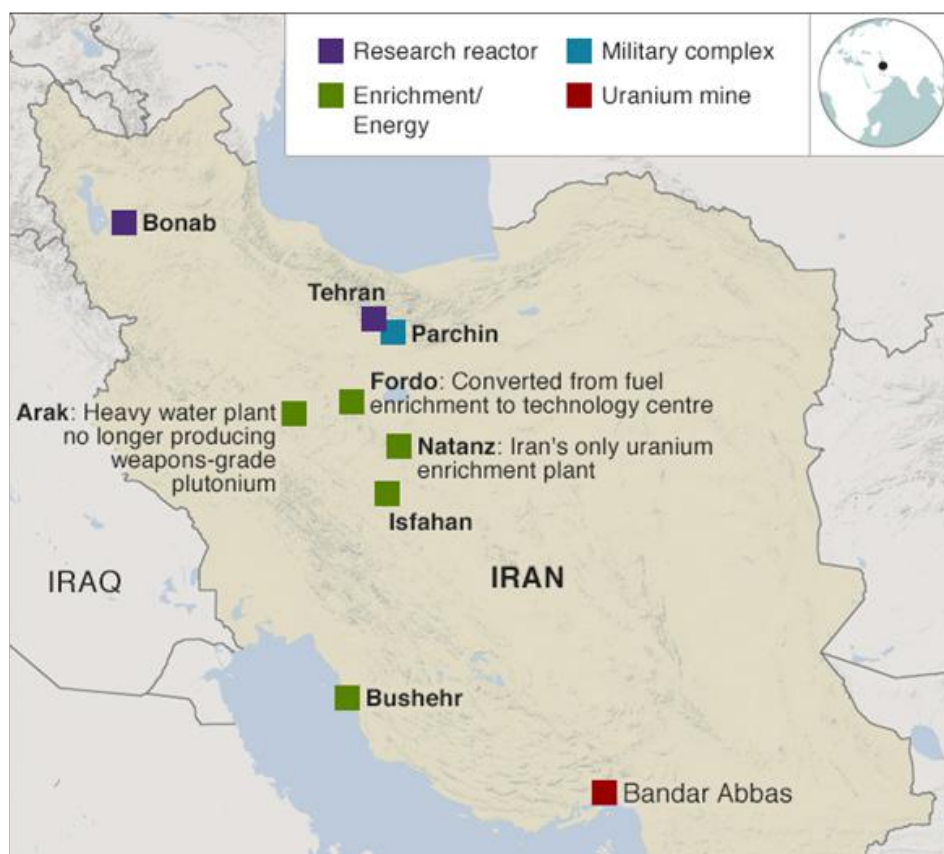
Reducing Uranium Enrichment:

Enriched uranium is not only used to make reactor fuel, but also nuclear weapons.

Iran had two facilities-Natanz and Fordo-where uranium hexafluoride gas was fed into centrifuges to separate out the most fissile isotope, U-235. Low-enriched uranium, which has a 3%-4% concentration of U-235, can be used to produce fuel for nuclear power plants. "Weapons-grade" uranium is 90% enriched.

In July 2015, Iran had almost 20,000 centrifuges. Under the JCPOA, it was limited to installing no more than 5,060 of the oldest and least efficient centrifuges at Natanz until 2026 - 15 years after the deal's "implementation day" in January 2016.

Limit Nuclear Programme: Iran's uranium stockpile was reduced by 98% to 300kg (660lbs), a figure that must not be exceeded until 2031. It must also keep the stockpile's level of enrichment at 3.67%. Research and development must take place only at Natanz and be limited until 2024.



No enrichment will be permitted at Fordo until 2031 and the underground facility will be converted into a nuclear, physics and technology centre. The 1,044 centrifuges at the site will produce radioisotopes for use in medicine, agriculture, industry and science.

No to Plutonium: Iran had been building a heavy-water nuclear facility near the town of Arak. Spent fuel from a heavy-water reactor contains plutonium suitable for a nuclear bomb.

World powers had originally wanted Arak dismantled because of the proliferation risk. Under an interim nuclear deal agreed in 2013, Iran agreed not to commission or fuel the reactor. Under the JCPOA, Iran said it would redesign the reactor so it could not produce any weapons-grade plutonium and that all spent fuel would be sent out of the country as long as the modified reactor exists.

Iran will not be permitted to build additional heavy-water reactors or accumulate any excess heavy water until 2031.

Supporters of US Pullout

Saudi Arabia: Saudi Arabia was among the first to welcome Mr Trump's decision. The country considers Iran a regional rival and is hugely concerned about the nation's growing influence in Iraq, Syria, Lebanon and Yemen.

Iran and Saudi Arabia have long been locked in a battle for regional control but tensions have escalated between the two nations in recent months. Saudi Arabia's young crown prince, Mohammed bin Salman, has long opposed the agreement and mounted a quiet lobbying campaign to kill it. Iran and Saudi Arabia represent the two main opposing sides of a 1,300-year schism in Islam, between the Sunnis and Shias.

Israel: Israel's Prime Minister Benjamin Netanyahu has been a vocal critic of the deal, which he says fails to provide adequate safeguards against a weapons programme. He was in favour of the US exiting the agreement.

Mr Netanyahu has repeatedly argued that the agreement is flawed

because Iran is not a reliable partner and has "lied" about its military nuclear programme. Israel sees Iran's influence in the Middle East as the "greatest threat to our world".

The US decision highlights the strong relationship between Mr Netanyahu and Mr Trump and will serve as their warning to Iran that the nuclear issue must be addressed for the longer term. However the deal was - according to its European signatories - working in its aim to curb Tehran's nuclear programme and without a "Plan B", they argue, there is no incentive for Iran to stick to its commitments.

Concerns for India

Oil Mathematics: Concerns about the potential impact from US imposing fresh sanctions on Iran - the third largest producer of crude globally - is among the major factors driving up crude prices. India and China are the two major importers of crude from Iran, accounting for almost 30 percent of the Iranian crude production. India imports nearly 80 percent of its crude requirement from international markets. If sanctions are imposed, Indian companies might have to look for alternate supplies to compensate supplies.

India's Relations With US, Israel, Saudi Arabia: Even as it has sought to enhance ties with Iran post the

Obama nuclear deal, India has forged closer relationships with the US, Israel and Saudi Arabia. The latter two have hailed Trump for scrapping the nuclear deal with Iran and this puts India in a very sticky position. Does it follow the US's lead and in turn keep Israel and Saudi Arabia happy or can it strike a delicate balance to maintain all four relationships.

Chabahar Port Development Project: India has committed more than \$500 million to develop the strategically located Iranian port of Chabahar. This project, which is already facing delays, could become a sticking point against India for the US, if New Delhi furthers investments in it. The port is likely to ramp up trade among India, Afghanistan and Iran in the wake of Pakistan denying transit access to New Delhi for trade with the two countries. The first phase of the Chabahar port was inaugurated in December last year. In February, India and Iran signed a pact that gives New Delhi operational control of a part of port for 18 months.

Regional Influence: Whatever India decides to do vis-a-vis Iran it will be caught between a rock and a hard place. If it follows the US lead and draws away from Iran, it will leave a hole that China and by association Pakistan, will be only too happy to fill. Already feeling encircled by China's growing influence in the region - especially with Nepal, Sri Lanka and the Maldives - India will not want to lose what little edge it has in maintaining some sort of geopolitical balance. Already, anticipating Trump pulling out of the nuclear deal, Iran shocked India by inviting Pakistan and China to participate in developing the Chabahar port.

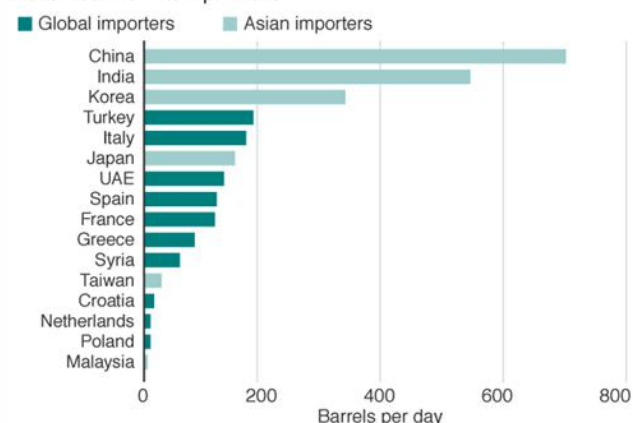
Way Forward

With the exit of U.S. from the Iran Nuclear Deal, the diplomatic world is in tremors. The flexing of U.S. economic muscle has clearly forced its allies to meow behind the US decision and to limit their grievances to verbal spat of condemnation. European companies are already feeling the heat and pulling out of Iran right from the time Trump has signaled to pull out from the deal and impose sanctions. Also it would be one sided to blame America for handling Iran, but on a holistic manner, the credentials of Iran are also doubtful and its rhetoric that "Iran will nuke Israel the moment it would possess a nuclear weapon", portrays that Iran cannot be trusted with weapons of mass destruction. For India, there will be a thin line to walk between its economic interests and diplomacy. But the major highlight is that India has shifted its diplomacy from principle based to interest based.

India has opted the wait and watch approach for handling the Iran issue and re-balancing its loyalties. To remain on the side of US is beneficial for India, but to have a favourable Iran to have steady oil supply and countering the nuances of Pakistan is also a necessity. Pakistan has frequent border clashes with Iran too. But viewing Iran only from Pakistan problem is misleading. Iran is important for India from economic stand point too. Iran is offering a route to central Asia thus opening new trade routes. Also Iran is a major oil supplier to India. The Chabahar port to counter China's influence is though a bit diluted attempt as Iran itself has invited Pakistan and China in Chabahar project. Thus this time of US Iran spat, can be used by India to flex its economic and diplomatic muscle and rebalance its position vis-a-vis Iran.

Iran's biggest customers

Average exports in thousands of barrels per day from November 2017 to April 2018



General Studies Paper- II

Topic: India and its neighborhood-relations.

Topic: Effect of policies and politics of developed and developing countries on India's interests, Indian diaspora.



2. KARL MARX TURNS 200

Context

On May 5, 1818, Karl Marx was born. This year in 2018, the world reaches and celebrates the bicentennial Marx's Birth i.e. Karl Marx turns 200. Karl Marx was a German philosopher, economist, historian, political theorist, sociologist, journalist and revolutionary socialist. Marx's theories about society, economics and politics—collectively understood as Marxism—hold that human societies develop through class struggle. In capitalism, this manifests itself in the conflict between the ruling classes (known as the bourgeoisie) that control the means of production and the working classes (known as the proletariat) that enable these means by selling their labour power in return for wages. Employing a critical approach known as historical materialism, Marx predicted that, like previous socio-economic systems, capitalism produced internal tensions which would lead to its self-destruction and replacement by a new system: Socialism.

When his first centenary was celebrated in 1918, the international socialist movement he had fought so tirelessly to create had been torn apart by World War I, with the revolutionary turmoil in Russia inducing further convulsions.

Now, as the world celebrates his second centenary, the collapse of the Soviet Union and China's adoption of a particularly brutal and corrupt form of market economy have shredded whatever remained of Marx's vision.

It would, however, be a mistake to simply add Marx to the list of great failures. Despite all the crimes perpetrated in his name, there is little doubt that his work not only changed the world but altered the way we understand.

Understanding Socialism

Socialism is an economic system where everyone in the society equally owns the factors of production. The ownership is acquired through a democratically elected government. It could also be a cooperative or a public corporation where everyone owns shares. The four factors of production are labor, entrepreneurship, capital goods and natural resources.

Socialism's mantra is, "From each according to his ability, to each according to his contribution." Everyone in society receives a share of the production based on how much each has contributed.

Socialism assumes that the basic nature of people is cooperative. That nature hasn't yet emerged in full because capitalism or feudalism has forced people to be competitive. Therefore, a basic tenet of socialism is that the economic system must support this basic human nature for these qualities to emerge.

The biggest disadvantage of socialism is that it relies on the cooperative nature of humans to work. It negates those within society who are competitive, not cooperative. Competitive people tend to seek ways to overthrow and disrupt society for their own gain. A second related criticism is that it doesn't reward people for being entrepreneurial and competitive. As such, it won't be as innovative as a capitalistic society. A third possibility is that the government set up to represent the masses may abuse its position and claim power for itself.

Marxist Influence

Marx's ideas have had a profound impact on world politics and intellectual thought. In the political realm, these tendencies include

Leninism, Marxism–Leninism, Trotskyism, Maoism, Luxemburgism and libertarian Marxism. Politically, Marx's legacy is more complex. Throughout the twentieth century, revolutions in dozens of countries labelled themselves "Marxist"—most notably the Russian Revolution, which led to the founding of the Soviet Union. Major world leaders including Vladimir Lenin, Mao Zedong, Fidel Castro, Salvador Allende, Josip Broz Tito, Kwame Nkrumah, Jawaharlal Nehru, Nelson Mandela, Xi Jinping, Jean-Claude Juncker and Thomas Sankara all cited Marx as an influence and his ideas informed political parties worldwide beyond those where Marxist revolutions took place. The countries associated with some Marxist nations have led political opponents to blame Marx for millions of deaths, but the fidelity of these varied revolutionaries, leaders and parties to Marx's work is highly contested and rejected by many Marxists.

Commodity Fetishism – Alienation - Capitalism

A central, and still very powerful, concept is that of "commodity fetishism": the situation in which relations between people become mediated by relations between things: commodities and money. Commodities (goods and services produced for exchange) are not simply things or objects, because they possess both use value (meeting human needs or wants) and exchange value (as a thing that can be traded in return for something else). But value then gets seen as intrinsic to commodities rather than being the result of labour and the exchange of commodities and market-based interaction are seen as the "natural" way of dealing with all objects, rather than as a historically specific set of social relations.

More broadly, commodity fetishism is the illusion emerging from the centrality of private property in capitalism, which then determines not only how people work and interact, but also how they perceive reality and understand social change. The urge to acquisition, the obsession with material gratification of wants and the ordering of human well-being in terms of their ability to command different commodities, could all be described as forms of commodity fetishism. The obsession with GDP growth per se among policymakers and the general public is an extreme, but widespread, example of commodity fetishism today.

Marx identified three "cardinal facts" of capitalist production:

1. Concentration of means of production in a few hands, whereby they cease to appear as the property of the immediate labourers and turn into social production capacities;
2. The organisation of labour into social labour: through cooperation, division of labour and the uniting of labour with the natural sciences;
3. The creation of the world market.

The third feature is what we now call globalisation and it is the natural result of the tendency of the system to spread and aggrandise itself - to destroy and incorporate earlier forms of production and to transfigure and transform technology and institutions constantly.

Capitalism is dynamic, constantly generating new types of production organisation and economic institutions: not just the factory system but more recent arrangements, financial institutions and structures, legal systems. The accumulation of capital generates higher productivity and transforms systems, but it is also associated with uneven development. Marx saw capitalism as being in a situation of continuous disequilibrium,

because of this tendency of uneven development, which is not confined to a single arena, but characterises all social and economic relations.

The system generates many conflicts and contradictions, only some of which culminate in periodic crises. Since the basic dynamics of capital is simultaneously to aggrandise itself and impoverish other classes such as workers and peasants, within and across nations, it obviously generates class conflicts. But the system also generates intra-class conflict, pitting individual capital against other capitals and the individual worker against other workers. There is a Darwinian struggle for survival constantly at work, so individualism, conflict and competition become the driving forces of the system.

But these also create what Marx called the anarchy of the market and the inevitable tendency towards crises. Overproduction in terms of the market (even when human needs of all the people in the society need not be satisfied) is a characteristic feature simply because of the way individual capitals operate in the drive to generate more profit. As a result, the process of accumulation is never smooth. Rather, it is uneven and punctuated by crises. Partly, this is the result of the very success of capitalism in delivering more economic growth and technological advance.

A fundamental feature of the capitalist system that Marx described and one that has complex social and philosophical underpinnings, is alienation. This does not refer to an isolated experience of an individual person's feeling of estrangement from society or community, but to a generalised state of the broad mass of wage workers. Most simply put, it can be expressed as the loss of control by workers over their own work. This alienation of the workers means that they effectively cease to be

autonomous human beings, because they cannot control their workplace, the products they produce, or even the way they relate to each other. Because this fundamentally defines their conditions of existence, this means that workers can never become autonomous and self-realised human and social beings under capitalism.

This alienation, combined with commodity fetishism, creates a peculiar kind of unfreedom—which is often not even widely noticed, because individual emancipation appears to result from "universal saleability". So every living creature is effectively transformed into property and all social relations become transactionary.

Shortcomings

To begin with, although Marx's vision promised an eventual disappearance of the state as class-antagonisms withered, it was thoroughly statist.

Who would own the means of production? The State. Who would plan their use? The State. And who would determine the distribution of the social product and so control the fate of every man, woman and child? The State.

To make matters worse, this all-powerful state was not one that admitted of pluralism. Marx had emphasised that politics was simply the expression of class conflict. As a result, once the abolition of private property had eliminated social classes, there was no need for politics — and any political opposition could be dismissed and suppressed, as counter-revolutionary.

Marx's predictions about the future of capitalism were almost entirely wrong. In industrialised countries, workers' real wages have risen and capitalism has not collapsed. But focusing on this alone overlooks Marx's contribution to analysing freedom in Western society. Freedom was Marx's central concern—paradoxical

as this may seem when we look at the regimes that have professed to follow his ideas. These regimes include China which today proclaims to be Marxist despite becoming the world's largest trading nation and crushing individual freedoms on a scale that would surely have troubled Marx. Without irony, the Chinese president and communist party leader Xi Jinping last year declared: "If we deviate from or abandon Marxism, our party would lose its soul and direction." If Marx has any claim to a place alongside Hobbes, Locke, Rousseau and Hegel as a major political philosopher, it rests on his critique of the liberal conception of freedom.

Marx's influence is still evident today among left-wing campaigners who favour revolution over incremental change. But everytime what they lack is any plan or a viable alternative.

Common ownership under socialism may take shape through technocratic, oligarchic, totalitarian, democratic or even voluntary rule. Prominent historical examples of socialist countries include the

Soviet Union and Nazi Germany. Contemporary examples include Cuba, Venezuela and China.

Due to its practical challenges and poor track record, socialism is sometimes referred to as a utopian or "post-scarcity" system, although modern adherents believe it could work if only properly implemented. They argue socialism creates equality and provides security—a worker's value comes from the amount of time he or she works, not in the value of what he or she produces – while capitalism exploits workers for the benefit of the wealthy.

Conclusion

While socialism and capitalism seem diametrically opposed, most capitalist economies today have some socialist aspects. Elements of a market economy and a socialist economy can be combined into a mixed economy. And in fact, most modern countries operate with a mixed economic system; government and private individuals both influence production and distribution.

Historically, mixed economies have followed two types of trajectories. The first type assumes that private individuals have the right to own property, produce and trade. State intervention has developed gradually, usually in the name of protecting consumers, supporting industries crucial to the public good (in fields like energy or communications) providing welfare or other aspects of the social safety net. Most western democracies, such as the India, follow this model.

The second trajectory involves states that evolved from pure collectivist or totalitarian regimes. Individuals' interests are considered a distant second to state interests, but elements of capitalism are adopted to promote economic growth. China and Russia are examples of the second model.

General Studies Paper- IV

Topic: Contributions of moral thinkers and philosophers from India and world.



3. SECURING DIGITAL DEMOCRACY

Why in News?

BBC has issued a clarification that it had not commissioned any pre-poll survey in Karnataka. A fake survey claiming that the Bharatiya Janata Party would win 135 seats in the forthcoming Karnataka elections has been doing the rounds on WhatsApp—with a BBC link provided for legitimacy. The link, of course, merely leads to BBC's India home page. This is the latest in a long string of fake news that has plagued the build-up to the elections.

The internet has opened up unprecedented possibilities in democratic politics. This is both to the good and, as is increasingly apparent, to the bad. It is difficult to fathom

that the same technologies that turbocharged Barack Obama in 2008 and the Arab Spring in 2010 gave birth to the Donald Trump phenomenon and Cambridge Analytica.

Background

Even though politicians for their campaign still use posters, cut-outs, fliers, graffiti and personal rally's to reach and win over voters but with the social media changing the picture of urban India, political parties are becoming tech savvy and realizing that social media is the only way to reach out to the youth. For 2009 general election social media usage in India was little. Today, however, Facebook has 93 million users and Twitter has an

estimated 33 million accounts in the country.

Social media has become an integral part of our lives. Facebook and Twitter tend to provide news faster than most news channels today. Celebrities, sports stars and corporate head honchos are present on these sites so that they can keep in touch with people. They keep their fans and followers informed of latest updates, promote their work and listen to what people have to say.

Lately, many politicians have also taken to social media like a fish to water. The best examples are Arvind Kejriwal and our Prime Minister Narendra Modi. Their updates on Facebook and

Twitter keep us informed about latest happenings and future plans.

Protecting the integrity of elections is a hot topic. From cyber-attacks to fake news influencing public opinion to other forms of external manipulation that could undermine democracies, voting security has risen to become a top issue for global governments.

It is not just the electorate that is rendered vulnerable. Political parties in India and the Election Commission (EC) are also becoming increasingly reliant on digital telecommunication. Previous attempts to rig elections included kidnappings, assassinations and booth capturing. Technology makes it cleaner and easier. Moreover, the threats of foreign interference increase manifold. Nothing prevents China or Pakistan from trying to hack Indian elections.

Karnataka Elections and Facebook

Facebook has tied up with an Indian fact-checking company in its first attempt to prevent fake news from influencing an election. The collaboration with Boom, a certified fact-checking agency based in Mumbai, it continued past the polling day for state elections in Karnataka, until the results were announced. Facebook, which has been under fire around the world for allowing the spread of fake news, already has fact-checking programmes in the US, the Philippines, France, Indonesia and Italy, but the Karnataka project is the first one launched expressly to deal with an election.

Boom is one of only two organisations in India — and around 50 in the world — that has been certified by the International Fact Checking Network, an initiative driven by the Poynter Institute, a non-profit media school in St Petersburg, Florida. With a team of six fact-checkers, Boom has verified the claims of politicians, examined the veracity of rumours and

scrutinised circulated videos or images that might be doctored. The results are posted on its website.

Information warfare (IW) is a concept involving the battle space use and management of information and communication technology (ICT) in pursuit of a competitive advantage over an opponent. Information warfare is the manipulation of information trusted by a target without the target's awareness, so that the target will make decisions against their interest but in the interest of the one conducting information warfare. As a result, it is not clear when information warfare begins, ends and how strong or destructive it is. Information warfare may involve collection of tactical information, assurance(s) that one's own information is valid, spreading of propaganda or disinformation to demoralize or manipulate the enemy and the public, undermining the quality of opposing force information and denial of information-collection opportunities to opposing forces. Information warfare is closely linked to psychological warfare.

How does it work? Once a fact-checker rates a story as false, it will rank the story lower in the news feed to ensure lesser distribution. This will result in the reduction of hoaxes affecting the number of people seeing the story. The company pointed out that website domains and Facebook pages that repeatedly share false news will be punished with reduced distribution. Facebook will also take away the punished domain's ability to advertise and monetise content to ensure that it is not financially lucrative for anyone to spread fake news on Facebook. If third party fact-checkers publish articles debunking false news stories, it will show those stories in a related articles section below the false news story.

In what can be considered as one of its most significant steps in this fight, Facebook will also notify its users and Facebook page administrators if they are trying to share a story or have already shared a story that has been marked as false news. Facebook is working on giving more control to its users to submit feedback on false news stories.

Analytics

Analytics provide information about potential supporters: where to find them, what's on their minds, what campaign messages they like or don't like and whether and how much they will donate. As more data is collected from our habits on and offline, it will play an increasingly important role in how political parties campaign and reach voters. Analytics will impact the way campaigns use every channel, from handshaking to social media and television.

Chatbots: Upcoming Technology

Each year, average broadband and mobile connection speeds rise, making our smartphones even more capable. This is helpful for one messaging medium in particular—video. You can expect to see increasing use of video, especially mobile video and live streaming. There is another fledgling technology trend that will spread into politics and elections: chatbots. Big marketing brands are starting to use mobile messaging apps, such as Facebook Messenger and WhatsApp, to generate one-to-one interactions with people, often underpinned by artificial intelligence bots. It's a social media trend that many have already noticed, with users gravitating towards Instagram, Snapchat and others for small-group or one-to-one conversations, rather than the more public platforms offered by Facebook and Twitter.

Minorities Rule

One of social media's most noticeable impacts has been to provide a platform to those who previously didn't have one. Whether it's protesting about the political status quo during the Arab Spring, drawing attention to causes like political corruption, social media has opened up the floor to people who wouldn't otherwise get a say. The

sense of belonging to a much larger group, which can be generated in new social media contexts, may make the articulation of what has traditionally been seen as more extreme minority views feel more mainstream. This may embolden those who may have traditionally lacked a mainstream outlet or sense that they belong to a wider community.

What Steps could be Taken?

Electoral dirty tricks and propaganda have always been a part of politics. Stalin famously urged writers to become “engineers of human souls”. What is new is the ease and scale with which technology can compromise our political process. The role social media, with its dopamine highs, played in Brexit and the 2016 US presidential election are the standout examples, but it goes beyond that. The US military has been experimenting with “computational propaganda” in Cuba and the Middle East. The Russians are developing software for information warfare. Then there are drug cartels in Mexico suppressing Twitter debates. Regimes are busy building digital dictatorships—from China’s Citizen Score initiative to Singapore’s “data controlled society”.

Following steps could be taken to march ahead on the road of cyber-security:

1. Unrestrained export of data on social media and across platforms should either be restricted or regulated.

2. Expand the definition of “sensitive personal data” under the proposed B.N. Srikrishna committee on data protection.
3. WhatsApp must be ordered to stop sharing data with its parent Facebook, as has been done in countries such as the UK.
4. Regulatory framework is needed to develop policy and guidelines to manage and conduct social media platforms. And also to define “hate speech” and “fake news”, while balancing it with citizen’s right to freedom of expression.
5. Removal of voter registries from the public domain.
6. Study the abuse—potential and actual—by technology platforms of their dominant position.
7. India also needs new rules and norms on political advertising and sale of data to third parties.
8. Election Commission needs to establish a cyber-security unit and train officers and political staffers in basic cyber hygiene.
9. Election Commission of India needs to work towards greater international cooperation with tech companies.
10. Domestic law needs to recognize and punish cyber interference in elections.
11. Reforms in the Indian Penal Code and IT Act, 2000 to better define a “cyber-crime”.

Conclusion

The cornerstone of democracy is the electoral process. The very definition of a democratic country is one that conducts free, fair and open elections. The advancement and changes in technology has opened new avenues for mass contact and advertising. The ways to reach the target audience has changed, evolved and enlarged. With this expansion in outreach, the dangers of technology have also percolated into the electoral system. The misuse of technology is not something new to the world. But to take mitigation measures is the need of the hour. Elections are bed-rock of democracy and maintaining its integrity is the prime responsibility of the agencies responsible for safeguarding the democracy including the citizen themselves. Election Commission has to be in its new avatar to not just understand the information and communication technology but also to evolve along with the threats and hacking technologies which are always a step ahead. Embracing a digital world comes with its own challenges. Is India ready for it?

General Studies Paper- II

Topic: Structure, organization and functioning of the Executive and the Judiciary; Ministries and Departments of the Government: pressure groups and formal/informal associations and their role in the Polity.

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4. PUZZLE OF ELECTRIFICATION OF VILLAGES

Why in News?

Seven decades after independence and nearly three decades after India’s economic liberalisation, present government took great pride in announcing that every village in the country has now been electrified. Leisang in Manipur became the last

village to be connected to the grid. All of India’s 597,464 census villages have finally got electricity. This marks a milestone in India’s history and sets the stage for universal household electrification, with all houses likely to get electricity connections by December 2018. However, that is

mostly on paper because, almost 32 million homes remain in the dark.

Introduction

Rural electrification is the process of bringing electrical power to rural and remote areas. Electricity is used not only for lighting and household purposes,

but it also allows for mechanization of many farming operations, such as well-pumping, threshing, milking and silo filling. In areas facing labor shortages, this allows for greater productivity at reduced cost. Electrification began in cities and towns and gradually extended to rural areas. An inherent challenge of extending electrical grids into the countryside is that doing so is expensive, but amortizing its capital cost well enough to sufficiently reduce the unit cost of each hook-up is harder to do in lightly populated areas (yielding higher per capita share of the expense).

Rural Electrification: Social and Economic Benefits

- Allow activities to occur after daylight hours, including education. In impoverished and undeveloped areas, small amounts of electricity can free large amounts of human time and labor. In the poorest areas, people carry water and fuel by hand, their food storage may be limited and their activity is limited to daylight hours.
- Reduce isolation through telecoms
- Improve safety with the implementation of street lighting, lit road signs.
- Improve healthcare by electrifying remote rural clinics.
- Reduces the need for candles and kerosene lamps with their inherent fire safety risks and improves indoor air quality.
- Improve productivity, through the use of electricity for irrigation, crop processing and other activities.

Rural Electrification: Government Initiatives

As of 2012, 304 million Indians (24 percent of the population) were without electricity. India has 18% of the world's population but 40% of the world's population without electricity. Rural areas in India are electrified

non-uniformly, with richer states being able to provide a majority of the villages with power while poorer states still struggling to do so. The Rural Electrification Corporation Limited was formed to specifically address the issue of providing electricity in all the villages across the country. Poverty, lack of resources, lack of political will, poor planning and electricity

NGOs as well as state programs. It is estimated that 1-2 GW of solar power will be required for the 100,000 un-electrified rural households in the country, not to mention the solar power requirements of un-electrified households of electrified villages. A breakdown is provided below on the number of states and UTs (Union Territories) that have been electrified :

Rural electrification rate	State/UT (Electrification rate, Unelectrified villages)
100%	20 states and 6 union territories
99.00-99.99%	Himachal Pradesh (99.81%, 34), Uttar Pradesh (99.77%, 224), Uttarakhand (99.52%, 76), Rajasthan (99.26%, 332), Madhya Pradesh (99.51%, 258), Karnataka (99.86%, 39), West Bengal (99.96%, 14)
95.00-98.99%	Jammu & Kashmir (98.31%, 107), Tripura (98.03%, 17), Bihar (97.46%, 993), Chhattisgarh (96.55%, 675), Odisha (95.33%, 2210)
90.00-94.99%	Jharkhand (93.98%, 1775), Assam (92.31%, 1950), Manipur (91.55%, 201), Mizoram (94.03%, 42), Nagaland (94.14%, 82)
80.00-89.99%	Meghalaya (85.9%, 42), Andaman & Nicobar Islands (86.11%)
Below 80%	Arunachal Pradesh (73.3%, 1404)

theft are some of the major causes which has left many villages in India without electricity, while urban areas have enjoyed growth in electricity consumption and capacity. The central government is increasingly trying to improve the dire conditions by investing heavily in bio-gas, solar as well as wind energy. Programs such as the Jawahar Lal Nehru (JNN) Solar Mission and Pradhan Mantri Gram Vidyut Yojana also known as the Saubhagya Scheme have been announced to fasten the pace of electrification and diversify the procedure. The work is also on-going for reducing wastage, providing better equipment and improving the overall infrastructure for electrical transmissions in villages. Currently, more than 99.8% of villages in India have been electrified with a further goal of providing complete electrification by May 2019. Northern and North-Eastern states in India are lagging behind the national average bringing the numbers down, primarily due to inefficient state governments and lack of economic resources; these states are currently the focus of many

Current Situation

As per the government's rural electrification data, Grameen Vidyutikaran, only 1,301 villages have 100 percent household connectivity. This means that just 0.21 percent of India's 600,000 villages are completely electrified. Worse, if we look at the quality of that power — its availability over the day and voltage supplied — a more realistic picture would come forward. The government has now set a new March 2019 deadline for electrification of all households.

The discrepancy between the numbers of villages electrified and the rural households that actually receive electricity could be attributed to the definition of "electrification of a village." According to the current rural electrification policy, a village is declared electrified if 10 percent of its households have electric power.

The government considers a village electrified if it boasts basic electrical infrastructure and even 10 per cent of its households and public places - including schools, local administrative

offices and health centres - have power. A Bloomberg report said that, less than 8 per cent of the newly electrified villages had all homes electrified. That means a majority are still a long way off from enjoying access to electricity and that is hardly a cause for celebration.

Several detailed studies, including a research carried out by Council on Energy, Environment and Water (CEEW), have revealed that while India claims that 99.8 percent of its villages have been electrified, several thousand households continue to live in the dark.

According to study by the Council on Energy, Environment and Water, which covered six of the most energy deprived states of the country - Bihar, Jharkhand, Madhya Pradesh, Uttar Pradesh, Odisha and West Bengal - there is typically a "significant lag between the time when electricity was first brought to the villages and the households in these villages actually getting electrified". The median lag in the report ranged from two years in the case of Jharkhand and Bihar to about 15 years in the case Madhya Pradesh and Uttar Pradesh and over 25 years in Odisha.

Significantly, the CEEW (Council on Energy, Environment and Water) study had found that among the 50 per cent of households without an electricity connection, a whopping two thirds had not taken an electricity connection despite having the electricity grid in the vicinity. Households cited main reasons as affordability of the connection charges and monthly charges and unreliable supply.

The National Electricity Policy unveiled in 2005 had pompously stated that "the Act mandates supply of electricity through a correct meter within a stipulated period. The Authority should develop regulations as required under Section 55 of the Act within three months. The Act requires all consumers to be metered within two

years. According to media reports, only half of the connected rural households are metered currently.

Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY)

Government of India has launched the scheme "Deendayal Upadhyaya Gram Jyoti Yojana" for rural electrification. The erstwhile Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) scheme for village electrification and providing electricity distribution infrastructure in the rural areas has been subsumed in the DDUGJY scheme. Rural Electrification Corporation is the nodal agency for implementation of DDUGJY.

Under DDUGJY-RE, Ministry of Power has sanctioned 921 projects to electrify 1,21,225 un-electrified villages, intensive electrification of 5,92,979 partially electrified

* Minimum contribution by Discom(s) is 10% (5% in case of Special Category States). However, Discom(s) contribution can go up to 40% (15% in case of Special Category States), if they do not intend to avail loan. In case, the Discom(s) do not avail loan, the maximum eligible additional grant would be 15% (5% in case of Special Category States) on achievement of prescribed milestones. The loan component would be provided by REC or by other FIs/Banks.

Note: 100% grant shall be provided by government of India towards expenditure incurred on activities for bridging the missing links of National Optical Fibre Network (NOFN), Creation of Rural Electrification Data Hub at Rural Electrification Corporation & Project Management Agency (PMA) as per provision in the scheme.

The funding mechanism of DDUGJY/Saubhagya will be as under:			
Agency	Nature of support	Quantum of support (Percentage of project cost)	
		Other than Special Category States	Special Category States #
Government of India (GOI)	Grant	60	85
Discom Contribution*	Own Fund	10	5
Lender (FIs/ Banks)	Loan	30	10
Additional Grant from GOI on achievement of prescribed milestones	Grant	50% of total loan component (30%) i.e. 15%	50% of total loan component (10%) i.e. 5%
Maximum Grant by GOI (including additional grant on achievement of prescribed milestones)	Grant	75%	90%

villages and provide free electricity connections to 397.45 lakh BPL rural households. As on 30th June 2015, works in 1,10,146 un-electrified villages and intensive electrification of 3,20,185 partially electrified villages have been completed and 220.63 lakh free electricity connections have been released to BPL households.

Special Category States (All North Eastern States including Sikkim, J&K, Himachal Pradesh and Uttarakhand)

Pradhan Mantri Sahaj Bijli Har Ghar Yojana- "Saubhagya"

Pradhan Mantri Sahaj Bijli Har Ghar Yojana - 'Saubhagya' a new scheme was launched by the Hon'ble Prime Minister on 25th September 2017. Under Saubhagya free electricity connections to all households (both APL and poor families) in rural areas and poor families in urban areas will be

provided. There are around 4 Crore un-electrified households in the country and they are targeted for providing electricity connections by December 2018. Rural Electrification Corporation (REC) has been designated as its nodal agency for the Saubhagya scheme.

To expedite and monitor the electrification process under Saubhagya a web portal (www.saubhagya.gov.in) was launched by Ministry of Power and New & Renewable Energy on 16th November 2017. The Saubhagya web portal has been designed and developed to disseminate information about the household electrification status (State, District, Village wise), household progress as on date, state wise target vs achieved, monthly electrification progress, etc.

Under the Saubhagya scheme, DISCOMs will also organize camps in villages/cluster of villages to facilitate on-the-spot filling up of application forms including release of electricity connections to households. DISCOMs/Power Department will also adopt innovative mechanism through dedicated web-portal/Mobile App for collection/consolidation of application form in electronic mode and also capturing process of release of electricity connections.

The details of consumers' viz., Name and Aadhar number/Mobile number/Bank account/Driving License/Voter ID etc., as available would be collected by the DISCOMs.

Scope of the Scheme

- Providing last mile connectivity and electricity connections to all un-electrified households in rural areas.
- Providing Solar Photovoltaic (SPV) based standalone system for un-electrified households located in remote and inaccessible villages/habitations, where grid extension is not feasible or cost-effective.

- Providing last mile connectivity and electricity connections to all remaining economically poor un-electrified households in urban areas. Non-poor urban households are excluded from this scheme.

Salient Features of Saubhagya Scheme are:

- All DISCOMs including private sector DISCOMs, state power departments and RE cooperative Societies shall be eligible for financial assistance under the scheme in line with DDUGJY.
- The prospective beneficiary households for free electricity connections under the scheme would be identified using Socio-Economic Caste Census (SECC) 2011 data. However, un-electrified households not covered under SECC data would also be provided electricity connections under the scheme on payment of Rs. 500 which shall be recovered by DISCOMs in 10 installments through electricity bill.
- The electricity connections to un-electrified households include provision of service line cable, energy meter including pre-paid/smart meter, single point wiring. LED lamps and associated accessories in line with technical specifications and construction standard.
- In case of un-electrified households located in remote and inaccessible areas, power packs of 200 to 300 Wp (with battery bank) with a maximum of 5 LED lights, 1 DC Fan, 1 DC power plug etc. may be provided along with the provision of Repair and Maintenance (R&M) for 5 years.
- The details of consumers viz., Name and Aadhar number/Mobile number/Bank account/Driving License/Voter ID etc., as available would be collected by the DISCOMs.

- The defaulters whose connections have been disconnected should not be given benefit of the scheme. However, the utilities may consider settlement of old dues and reconnection as per norms.

Conclusion

While they are chasing village electrification as an interim goal, they have already laid out the goal to electrify each household in the country by March 2019, as part of Saubhagya scheme. But even providing connection to every household will not be sufficient and we need to move towards multi-dimensional definition and measurement of electricity access. Their 24x7-power-for-all objective tries to move in that direction. In the current situation, it can be clearly seen that India has achieved more-or-less cent percent census village electrification, though all hamlets of census villages may not have been electrified.

Despite these challenges, the country has traversed a long, hard, impressive journey towards achieving 100 per cent electrification. In fact, according to the International Energy Agency, by providing energy access to over 500 million people since 2000, India has become one of the greatest-ever success stories in electrification. But with the World Bank is claiming that India topped the list of most power-deficient countries - with Nigeria for company - celebrations seem a tad premature.

General Studies Paper- II

Topic: Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes; mechanisms, laws, institutions and Bodies constituted for the protection and betterment of these vulnerable sections.

General Studies Paper- III

Topic: Infrastructure: Energy, Ports, Roads, Airports, Railways etc.



5. MULTIVERSE : MYTH OR REALITY?

Why in News?

With a science paper published after his death, Stephen Hawking has revived debate on a deeply divisive question for cosmologists: Is our Universe just one of many in an infinite, ever-expanding "multiverse"?

According to one school of thought, the cosmos started expanding exponentially after the Big Bang. In most parts, this expansion or "inflation" continues eternally, except for a few pockets where it stops. These pockets are where universes like ours are formed – multitudes of them that are often likened to "bubbles" in an ever-expanding ocean dubbed the multiverse.

Many scientists don't like the idea, including Hawking, who said in an interview last year: "I have never been a fan of the multiverse."

If we do live in an ever-inflating multiverse, it would mean the laws of physics and chemistry can differ from one universe to another, a concept that scientists struggle to accept.

In his last contribution to cosmology, Hawking – with co-author Thomas Hertog from the KU Leuven university in Belgium – does not dismiss the multiverse concept, but proposes dramatically scaling it down.

Who is Stephen Hawking?

Professor Stephen William Hawking was born on 8th January 1942 (exactly 300 years after the death of Galileo) in Oxford, England. He was a theoretical physicist, cosmologist and author. He is known for his contributions to the fields of cosmology, general relativity and quantum gravity, especially in the context of black holes. In the 1960s and 1970s, he worked on ground-breaking theorems regarding singularities within the framework of general relativity and made the theoretical prediction

that black holes should emit radiation (known today as Hawking radiation). He has also published several works of popular science in which he discusses his own theories and cosmology in general, including the runaway bestseller "A Brief History of Time" and has come to be thought of as one of the greatest minds in physics since Albert Einstein. Among the myriad other scientific investigations pursued by Hawking over the years are the study of quantum cosmology, cosmic inflation, helium production in anisotropic Big Bang universes, "large N" cosmology, the density matrix of the universe, the topology and structure of the universe, baby universes, Yang-Mills instantons and the S matrix, anti-de Sitter space, quantum entanglement and entropy, the nature of space and time and the arrow of time, spacetime foam, string theory, supergravity, Euclidean quantum gravity, the gravitational Hamiltonian, the Brans-Dicke and Hoyle-Narlikar theories of gravitation, gravitational radiation, holography, time symmetry and wormholes.

Never afraid to court controversy, he even began to question the Big Bang theory itself in the 1980s, suggesting that perhaps there never was a start and would be no end, but just change, a constant transition of one "universe" giving way to another through glitches in space-time. He developed his "No Boundary Proposal" in collaboration with the American physicist Jim Hartle. Under classical general relativity, the universe either has to be infinitely old or had to have started at a singularity, but Hawking and Hartle's proposal raises a third possibility: that the universe is finite but had no initial singularity to produce a boundary.

Multiverse

Multiverse, a hypothetical collection of potentially diverse observable

universes, each of which would comprise everything that is experimentally accessible by a connected community of observers. The observable known universe, which is accessible to telescopes, is about 90 billion light-years across. However, this universe would constitute just a small or even infinitesimal subset of the multiverse. The multiverse idea has arisen in many versions, primarily in cosmology, quantum mechanics and philosophy and often asserts the actual physical existence of different potential configurations or histories of the known observable universe. The term multiverse was coined by American philosopher William James in 1895 to refer to the confusing moral meaning of natural phenomena and not to other possible universes.

Why Multiverse Exist?

There must be more Universe than the part that is observable to us. If you look just at the portion of the Universe we can see, you can measure its spatial curvature and find that it's incredibly close to flat. No regions repeat; no locations connect or loop back on one another; no large-curvature regions show themselves on a scale approaching that of the Universe we can observe. If the Universe were a hypersphere, the four-dimensional analogue of a sphere, it must have a radius of curvature hundreds of times the size of what we can observe. There must be more Universe out there than what we can access.

But this isn't just a conclusion from observations; it's the same conclusion that we'd draw from our leading theory of the Universe's origin: cosmological inflation. Prior to the hot Big Bang, the fabric of the Universe was expanding at an exponential rate, where every 10-35 seconds or so, it would double in scale in all dimensions. Inflation

went on for at least as long as 10-33 seconds or so, but could have lasted far longer: seconds, years, millennia, trillions of years or an arbitrarily long length of time. When inflation ends, the Universe we're left with is stretched flat, the same temperature everywhere and far, far vaster than anything we can ever hope to observe. Considering the finite nature of all we can see, inflation is the natural way to create a Multiverse of possibilities.

Without a solid knowledge of how inflation began, or if it ever had a beginning, we cannot know how much "Multiverse" there is out there beyond our actual Universe. But based on the properties of inflation that imprint themselves on the Universe we inhabit, we can draw a few conclusions about it. In particular:

- The lack of spatial curvature.
- The adiabatic nature and spectrum of fluctuations imprinted on the cosmic microwave background.
- The magnitude of imperfections that gave rise to the large-scale structure we see.
- The constraints on the gravitational waves inflation could have created.
- And the superhorizon fluctuations that we observe (on scales larger than the visible Universe).

All give us some important constraints on the type of inflation that occurred and teach us two very important lessons, if the implications of these verified and validated theories are correct, about our Multiverse.

1. Inflation did not occur at arbitrarily high energies. There's an energy scale at which the laws of physics no longer make sense: the Planck scale, or about 10¹⁹ GeV. This is about 100 trillion times larger than the maximum energies the LHC achieves and a factor of about 100 million higher than the highest energy cosmic particles we've ever detected in the Universe. From the imprints of inflation, we can

conclude that the temperature at the start of the hot Big Bang never got higher than about 10¹⁵ or 10¹⁶ GeV, safely below the Planck scale. This implies that inflation likely occurred below that scale as well. If true, this would mean that the inflationary epoch obeyed the current laws of physics, as well as every region of the Multiverse that inflation created.

2. There are countless regions where inflation did not end and still continues today. The idea that the Big Bang happened everywhere at once may apply to our Universe, but certainly ought not to apply to the vast majority of Universes existing in the Multiverse. Assuming that inflation is a quantum field, like all fields we know of, it must spread out over time, meaning that in any region of space, it has a probability of ending at a certain time, but also a probability of continuing on for a while longer.

In the region that became our Universe, which may encompass a large region that goes far beyond what we can observe, inflation ended all-at-once. But beyond that region, there are even more regions where it didn't end. Those regions grow and inflate as time goes on and even though many of those new regions will see inflation end, the ones where it doesn't will continue to inflate. Inflation, therefore, should be eternal to the future, at least in some regions of space. This is irrespective of whether it was eternal to the past or not.

Accepting all of this leads to an inescapable conclusion: we live in a Multiverse and our Universe is just one of countlessly many that exist within it. However, the standard predictions that come out of this are difficult to do science with. They include:

- Those different regions where inflation ends should never collide or interact.

- That the fundamental constants and laws in different regions should be the same as they are here.
- And that unless inflation was truly eternal to the past, there isn't enough "space" to contain all the parallel Universes that the many-worlds interpretation of quantum physics would require.

Arguing For a Multiverse

Around 13.7 billion years ago, simply speaking, everything we know of in the cosmos was an infinitesimal singularity. Then, according to the Big Bang theory, some unknown trigger caused it to expand and inflate in three-dimensional space. As the immense energy of this initial expansion cooled, light began to shine through. Eventually, the small particles began to form into the larger pieces of matter we know today, such as galaxies, stars and planets. One big question with this theory is: are we the only universe out there? With our current technology, we are limited to observations within this universe because the universe is curved and we are inside the fishbowl, unable to see the outside of it (if there is an outside.)

There are at least five theories why a multiverse is possible:

1. **Infinite Universes:** We don't know what the shape of space-time is exactly. One prominent theory is that it is flat and goes on forever. This would present the possibility of many universes being out there. But with that topic in mind, it's possible that universes can start repeating themselves. That's because particles can only be put together in so many ways.
2. **Bubble Universes:** Another theory for multiple universes comes from "eternal inflation." Based on research from Tufts University cosmologist Alexander Vilenkin, when looking at space-time as a whole, some areas of space stop inflating like the Big Bang

inflated our own universe. Others, however, will keep getting larger. So if we picture our own universe as a bubble, it is sitting in a network of bubble universes of space. What's interesting about this theory is the other universes could have very different laws of physics than our own, since they are not linked.

3. Daughter Universes: Or perhaps multiple universes can follow the theory of quantum mechanics (how subatomic particles behave), as part of the "daughter universe" theory. If you follow the laws of probability, it suggests that for every outcome that could come from one of your decisions, there would be a range of universes — each of which saw one outcome come to be. So in one universe, you took that job to China. In another, perhaps you were on your way and your plane landed somewhere different and you decided to stay. And so on.

4. Mathematical Universes: Another possible avenue is exploring mathematical universes, which, simply put, explain that the structure of mathematics may change depending in which universe you reside. "A mathematical structure is something that you can describe in a way that's completely independent of human baggage," said theory-proposer Max Tegmark of the Massachusetts Institute of Technology, as quoted in the 2012 article. "I really believe that there is this universe out there that can exist independently of me that would continue to exist even if there were no humans."

5. Parallel Universes: And last but not least as the idea of parallel universes. Going back to the idea that space-time is flat, the number of possible particle configurations in multiple universes would be limited to $10^{10^{122}}$ distinct possibilities, to be exact. So, with an

infinite number of cosmic patches, the particle arrangements within them must repeat — infinitely many times over. This means there are infinitely many "parallel universes": cosmic patches exactly the same as ours (containing someone exactly like you), as well as patches that differ by just one particle's position, patches that differ by two particles' positions and so on down to patches that are totally different from ours.

Arguing Against a Parallel Universe

Not everyone agrees with the parallel universe theory, however. Some physicists agreed that space-time could go on forever in theory, but said that there are some limitations with that idea. The key problem is the universe is just under 14 billion years old. So our universe's age itself is obviously not infinite but a finite amount. This would (simply put) limit the number of possibilities for particles to rearrange themselves and sadly make it less possible that your alternate self did get on that plane after all to see China.

Also, the expansion at the beginning of the universe took place exponentially because there was so much "energy inherent to space itself," . But over time, that inflation obviously slowed — those particles of matter created at the Big Bang are not continuing to expand. Among the conclusions: that means that multiverses would have different rates of inflation and different times (longer or shorter) for inflation. This decreases the possibilities of universes similar to our own.

Even setting aside issues that there may be an infinite number of possible values for fundamental constants, particles and interactions and even setting aside interpretation issues such as whether the many-worlds-interpretation actually describes our physical reality, the fact of the matter is that the number of possible outcomes rises so quickly — so much faster than

merely exponentially — that unless inflation has been occurring for a truly infinite amount of time, there are no parallel universes identical to this one.

But rather than seeing this lack of other universes as a limitation, it instead takes the philosophy that it shows how important it is to celebrate being unique.

He advises to make the choices that work for you, which "leave you with no regrets." That's because there are no other realities where the choices of your dream self play out; you, therefore, are the only person that can make those choices happen.

Conclusion

Man has always been awestruck by stars and the moon. The curiosity to know beyond what he can see, has taken the mankind from stone age to the age of information technology. The concept of multiverse has been doing rounds for a couple of years and has kept the cosmologists and the physicists busy for a long period of time. It has been often concluded that the discovery of a multiverse is of no major significance to the field of quantum physics. Many years ago copper existed but electricity was not there, so wires could not be made and transmission of electricity was not even a question. The early man didn't know the use of copper and many similar things like silicon, radioactive materials etc., but all these existed even then. Maybe humanity don't know or is not yet ready to make the use of the concept of multiverse but some generations from now, there could be a possibility of the proverbial teleportation and time travel. Particle Physics as a discipline is more surprising and challenging. Multiverse could open a host of possibilities of

General Studies Paper- III

Topic: Awareness in the fields of IT, Space, Computers, robotics, nano-technology, bio-technology and issues relating to intellectual property rights.



6. EXTREME WEATHER EVENTS: THE NEW NORMAL IN INDIA

Why in News?

A wave of extreme weather over Northern states in India has killed at least 124 people and caused much misery, mostly at many places in Northern, Central and Eastern India. The residents of this 'weather hotspot' region are used to annual storms carrying natural dust clouds in the pre-monsoon season, from the Thar Desert and further west. But they have been hit by a particularly destructive version this year, one that combined hot Western winds and moisture from the East.

Introduction

Over the past few years, rise in the global temperature has set new records and that is leading to increase in the number of extreme weather events. India may also witness an increase in the severity and frequency of the dust storms and thunderstorms similar to what the Northern Indian states experienced recently. Record April temperatures in parts of Pakistan, at one place exceeding 50°C, are thought to have added to the ferocity of the dust-laden winds. This could be a recurring feature. Many of the casualties in the recent storms were caused by collapsing infrastructure, such as electricity transmission lines that were not built to withstand such weather. Good housing could have saved many. India's vulnerability to such storms has always been underscored by scientific estimates of the flow of aerosols, or dust particles.

Globally, the major dust-producing regions pump 1,000-3,000 teragrams of particles into the atmosphere annually, with the Sahara alone responsible for a third of this, according to the UN Environment Programme. India is at the receiving end of winds from West Asia, although some scientists

reported recently an overall reduction in dust volumes in the pre-monsoon season due to a pattern of increased rainfall. Even if that were to be true, unexpected surges such as the recent one pose a challenge. In the wake of the recent storm state governments have blamed the India Meteorological Department (MD) for not providing clear warnings, while the IMD claims to have conveyed the forecast of the coming storm to the Centre several days ahead.

What is a Dust Storm?

A dust storm is a strong, turbulent wind that carries clouds of fine dust, soil, and sand over a large stretch, which mainly occurs in arid and semi-arid regions. In case of a dust storm, due to excessive heating, the water from the clouds evaporates before it could land. So soil is dry and the severe winds lift this soil up to 500 metres above the land. While wind speed is normally around 50 kmph in a thunderstorm, in case of dust storm, it reaches up to 100 kmph and in some cases it can touch 130 kmph, making conditions severe.

Mechanism

Sand and dust storms are common meteorological hazards in arid and semi-arid regions. They are usually caused by thunderstorms – or strong pressure gradients associated with cyclones – which increase wind speed over a wide area. Storms need three things: moisture, warm temperatures and an agitated atmosphere to push the warm moist air upwards. The unusually high temperatures in Northwest India, especially Rajasthan and a cyclonic circulation over Haryana and adjoining areas meant that air close to the land surface was pushed upwards where it formed storm clouds. The moisture was provided by easterly winds blowing in from Bay of Bengal,

especially in the Eastern parts of UP and Bihar. Simultaneously, a western disturbance, a system of low pressure, brought moisture from Eurasian water bodies. In the absence of moisture, the strong upward movement of air would only carry dust and cause dust storms. However, the incursion of moisture because of the western disturbance brought thunderstorms even to areas which would normally only experience dust storms.

A Dust Storm by Any Other Name

Dust storms are sometimes referred to by the winds that generate them:

Haboob: The word means "strong wind" in Arabic, but haboobs are also called "black blizzards."

Shamal: The persistent northwest winds in Iraq and the Persian Gulf that pick up dust into the atmosphere. Shamal winds cause the most hazardous weather in the region.

Sirocco: Very strong pre-frontal winds that originate in the Sahara and blow up dust over North Africa and Southern Europe. In Libya it's called ghibli. Sirocco winds rival hurricane wind speeds and can blow for up to 50 consecutive days.

Dust Devils: Common worldwide, these dust-filled vortexes look like tornadoes, but smaller and less intense. They typically last only a few minutes.

Heating of the landmass causes an updraught or the movement of air upwards. If moisture is present, the updraught will carry the moisture upwards. When this air reaches the colder parts of the upper atmosphere, water vapour condenses to form dense deep clouds. When clouds cannot contain moisture, it rains, creating a downdraught, a movement of air downwards.

The strong winds lift large amounts of sand and dust from bare, dry soils into the atmosphere, transporting those hundreds to thousands of kilometres away. Once released from the surface, dust particles are raised to higher levels of the troposphere by turbulent mixing and convective updrafts. They

can then be transported by winds for lengths of time, depending on their size and meteorological conditions, before being pulled back down to the surface again. As larger particles sediment more quickly than smaller ones, there is a shift toward smaller particle sizes during transport. Dust is also washed out of the atmosphere by precipitation. The average lifetime of dust particles in the atmosphere ranges from a few hours for particles with a diameter larger than 10 μm , to more than 10 days for the sub-micrometric ones.

Interaction with Weather and Climate

Aerosols, particularly mineral dusts, impact weather as well as global and regional climate. Dust particles, especially if coated by pollution, act as condensation nuclei for warm cloud formation and as efficient ice nuclei agents for cold cloud generation. The ability of dust particles to serve as such depends on their size, shape and composition, which in turn depend on the nature of parent soils, emissions and transport processes. Modification of the microphysical composition of clouds changes their ability to absorb solar radiation, which indirectly affects the energy reaching the Earth's surface. Dust particles also influence the growth of cloud droplets and ice crystals, thus affecting the amount and location of precipitation.

Airborne dust functions in a manner similar to the greenhouse effect: It absorbs and scatters solar radiation entering Earth's atmosphere, reducing the amount reaching the surface and absorbs long-wave radiation bouncing back up from the surface, re-emitting it in all directions. Again, the ability of dust particles to absorb solar radiation depends on their size, shape and mineralogical and chemical composition. The vertical distribution of dust in the air (vertical profile) and the characteristics of the

underlying surface are also required to quantify this impact.

What is a Thunderstorm?

Thunderstorms are severe weather events associated with frequent lightning, high winds, and heavy rainfall. They can and do occur at any time of the year, but are most likely to happen during the afternoon and evening hours and during the spring and summer seasons. They are so called because of the thunderous loud noise they make because of thunder.

Impacts on Human Health

Airborne dust presents serious risks for human health. Dust particle size is a key determinant of potential hazard to human health. Particles larger than 10 μm are not breathable, thus can only damage external organs – mostly causing skin and eye irritations, conjunctivitis and enhanced susceptibility to ocular infection. Inhalable particles, those smaller than 10 μm , often get trapped in the nose, mouth and upper respiratory tract thus can be associated with respiratory disorders such as asthma, tracheitis, pneumonia, allergic rhinitis and silicosis. However, finer particles may penetrate the lower respiratory tract and enter the bloodstream, where they can affect all internal organs and be responsible for cardiovascular disorders.

Impacts on the Environment and Society

Surface dust deposits are a source of micro-nutrients for both continental and maritime ecosystems. But dust also has many negative impacts on agriculture, including reducing crop yields by burying seedlings, causing loss of plant tissue, reducing photosynthetic activity and increasing soil erosion. Indirect dust deposit impacts include filling irrigation canals, covering transportation routes and affecting river and stream water quality. Reductions in visibility due to airborne dust also have an impact on air and land transport. Poor visibility conditions are a danger during aircraft

landing and taking off – landings may be diverted and departures delayed. Dust can also scour aircraft surfaces and damage engines.

Early Warning System

The Early Warning System (EWS) is very essential in disaster risk reduction. The essential components of Early Warning Systems are risk knowledge, monitoring and warning services, dissemination and communication of warning and response capability. Thus in order to save lives from lightning it is necessary to develop early warning system and moreover dissemination of early warning information.

Forecast systems, particularly those dealing with short-term forecasts, generally use numerical weather prediction methods based on sets of mathematical equations on the behavior of the atmosphere. These equations dealing with various atmospheric phenomena like land/sea temperature, rain, wind etc. are combined into complex mathematical models. These models receive constant inputs on current weather observations, from which forecast data for future weather is calculated. Although recent advances in satellite and computer technology have helped in significantly improving weather forecasting, our knowledge about the atmosphere is still incomplete and hence 100% accuracy in weather prediction is not possible.

Types of Forecasts

There are four types of weather forecasts. Now-casting is about predicting weather conditions up to 24 hours from the current time. Short range forecasts are valid up to 72 hours ahead while medium range forecasts predict conditions for a period of 4 to 10 days. Monthly and seasonal forecasts like predictions about the arrival of monsoons, come under long range forecasting, that is the prediction of average weather conditions for

a minimum of 30 days and up to an entire season.

Way Forward

India could witness an increase in the severity and frequency of dust storms and thunderstorms due to rising global temperatures. Severe dust storms, thunderstorms and lightning hit several parts of India, resulting in the deaths of at least 124 people and injuries to 300 others. More than 10,000 utility poles and hundreds of power transformers were damaged, while farmers suffered losses to their cattle and poultry stocks.

Climate change is leading to a rise in global temperature. According to the NASA the global surface temperature of the Earth in 2017 was the second-warmest in recorded history since 1880. The trend is continuing, the global temperature in January of 2018

was the fifth-highest for that month since 1880. In India, global warming could increase the frequency of storms.

While the current spate of bad weather has a lot to do with local conditions, notably the western disturbance, a low-pressure system bringing in moisture from the west towards India, the rise in temperatures makes these types of weather events more frequent and a little more extreme.

The Centre has to raise its game in forecasting and broadcast early warnings. In fact, as the World Meteorological Organisation points out, clarity and frequency of warnings are keys to saving lives.

Local authorities must enhance disaster response, to minimise loss of life and property. In a rapidly warming world, freak weather events are no longer once-in-a-hundred-year events

and are fast becoming the new normal. The focus must be on improving the resilience of areas that are prone to such extreme events to minimise the damage that such weather events do.

The Indian government has woken up to the need to combat climate change, setting ambitious goals for the use of things like renewable energy sources and electric cars, and making some progress towards them. But the fact remains that effective tackling climate change will require a massive overhaul of our very way of life.

bending and molding the rules of the universe that has been existing since many millenials. This could be another leap for a mankind.

General Studies Paper- III

Topic: Disaster and disaster management.



7. THE LOOMING FEARS OF CURRENCY CRISIS

Why in News?

The crude oil prices have risen to a multi-year high and the Indian rupee has slumped to a 15 month low in early May 2018. Being a net crude oil importer, India is vulnerable to a sharp rise in prices that will affect the import bill and disrupt the fiscal position. India's Current Account Deficit (CAD), which was 2% of the GDP in the third quarter of the fiscal year 2017-18, could treble.

Introduction

Rising crude oil price has a direct impact on India's GDP. India could be one of the biggest losers in the world if crude oil hits \$85 a barrel. Data from Oxford Economics and Haver Analytics show that if oil price hits even \$85 a barrel, it will impact India's GDP between 0.5% and 1% in next two years. The Economic Survey 2018 estimated that a \$10 per barrel increase in the price of oil reduces economic growth by 0.2-

0.3 percentage points and worsens the CAD by about \$9-10 billion dollars.

A weaker rupee and higher oil prices will cause inflation to accelerate, which may prompt the Reserve Bank of India to hike interest rates earlier than expected. Higher domestic rates coming before the economy has found a stable footing, could also derail India's recovery.

Currency depreciation is a fall in the value of a currency in a floating exchange rate system. Currency depreciation can occur due to any number of reasons – economic fundamentals, interest rate differentials, political instability, risk aversion among investors and so on.

Countries with weak economic fundamentals such as chronic current account deficits and high rates of inflation generally have depreciating currencies. Currency depreciation, if orderly and gradual, improves a nation's export competitiveness and may improve its trade deficit over

time. But abrupt and sizeable currency depreciation may scare foreign investors who fear the currency may fall further and lead to them pulling portfolio investments out of the country, putting further downward pressure on the currency.

Rupee Depreciation

At first depreciation is a symptom' and not the problem. It is the result and culmination of multiple factors. India has chronic and persistent trade deficit leading to high current account deficit. It has ballooned in recent times due to high crude petroleum prices and also surge in imports of gold. A high deficit only implies greater demand for USD (to pay for imports) but not enough supply of USD (through exports), putting pressure on the rupee to depreciate. Once the rupee begins to depreciate, it further widens current account deficit, leading to further down slide of the rupee. At each stage the landing gets harder and harder.

Causes

Easy monetary policy and high inflation are two of the leading causes of currency depreciation. In a low interest-

rate environment, hundreds of billions of dollars chase the highest yield. Expected interest rate differentials can trigger a bout of currency depreciation. While higher inflation is combated with central banks increasing interest rates, too much inflation is seen as a threat to stability, hence the likelihood of currency depreciation.

Additionally, inflation can lead to higher input costs for export which makes a nation's exports less competitive in global markets, which will widen the trade deficit and cause the currency to depreciate.

In a floating exchange rate system, a currency's value goes up (or down) if the demand for it goes up more (or less) than the supply does. In the short run this can happen unpredictably for a variety of reasons, having to do with trade flows, speculation, or other factors in the international capital market. For example, a surge in purchases of foreign goods by home country residents will cause a surge in demand for foreign currency with which to pay for those goods, causing a depreciation of the home currency.

A longer-run trend of appreciation (or depreciation) is likely to be caused by home country inflation being lower (or higher) on average than inflation in other countries, according to the principle of long-run purchasing power parity.

Current Account Deficit: A consequence of poor competitiveness and high demand for imports is a current account deficit. This means India is purchasing more imports of goods and services than it is exporting. A large current account deficit tends to put downward pressure on a currency. This is because more currency is leaving the country to buy imports than is coming in to buy exports.

Oil Prices: India is a net importer of oil. It has to buy oil in dollars. Therefore,

rising oil prices worsen India's current account and also weaken the Rupee. More Indian's rupees have to be spent on buying oil.

The sharp rise in crude prices coupled with Rupee depreciation against the US dollar in addition to other concerns is expected to negatively impact oil marketing companies (OMCs) over the medium term.

Effect of Depreciation

1. Trade deficit will widen because of costlier imports, worsening the current account deficit.
2. Fuel price will keep petroleum subsidy in check, but fertilizer subsidy will rise. Spending on any kind of foreign exchange denominated spending will increase. Capital inflow will slow or reverse.
3. Spending on discretionary goods will increase.
4. Forex reserves could fall putting pressure on rupee.
5. In case of weak demand companies may not be able to pass on higher inputs costs.
6. The government and the RBI have issued a series of measures to reduce the current account deficit and bolster the rupee.
7. Exports are unable to leverage the weak rupee fast enough given the speed of its descent. In fact many exporters are caught out because of fixed price contracts in rupees wherein they cannot get the benefits of its rapid fall. The balance of payments is tilting sharply against us.
8. The Indian stock- market will take a hiding as opposed to a beating.
9. Global rating agencies will revise rating downwards to "junk" status, making international borrowing difficult and even more expensive.

Concerns

1. **Capital Controls:** Capital control is another factor affecting rupee value. The decision by the RBI and Govt. to impose temporary restrictions on capital flows has not gone down well with the markets and it will affect domestic companies from investing abroad as well as foreign firms from pumping money in to India. When there is a capital inflow in to the country the demand for currency increases leading to currency appreciation. Capital out flows causes the country's currency to depreciate as supply of it's currency decreases and demand for foreign currency increases.
2. **Devaluation Spiral:** The concern is that high Indian inflation causes devaluation, which in turn feeds into more cost-push inflation. Thus it becomes a difficult to escape out of this unwelcome negative spiral of inflation-devaluation-inflation.
3. A weaker rupee and higher oil prices will cause inflation to accelerate, which may prompt the Reserve Bank of India to hike interest rates earlier than expected.

Policies to Stem Devaluation in Rupee

Supply-side policies to improve competitiveness.

Reduce dependency on foreign oil, through domestic and renewable energy.

Monetary policy to tackle inflation and reduce domestic demand. But, will conflict with lower economic growth and lead to higher unemployment.

Financial controls, e.g. limiting the amount of gold imports to reduce the current account deficit.

More to Come

With interest rates in the U.S. set to rise further, India — one of the biggest

victims during the "taper tantrum" in 2013 — has once again found itself defending against large amounts of capital outflow. That's placing additional pressure on the rupee. The government has relaxed requirements on foreign investments in its capital markets, but the selloff has continued, according to data by the country's National Securities Depository Limited. India saw a net outflow of \$244.44 million by the end of April this year, reversing the \$30.78 billion of net buying for 2017, according to the data. India has over the last year built up its foreign reserves, but its financing needs — a result of its twin deficits — mean the central bank may not have much room to intervene should the selloff worsen.

The RBI said economic activity could accelerate given signs of rising capital expenditure and improving global demand, which would help the currency to stabilize. Rupee could find a foothold eventually when rates and oil stabilize and a sustained global growth could eventually narrow the (current account deficit), boost income and anchor the (rupee).

Conclusion

The rupee's decline affects everyone in the economy because it feeds directly

and indirectly into general inflation, which is a continuing problem even as output growth decelerates and therefore hits common people hard. There are several ways in which the falling rupee immediately has an inflationary impact, one of the most important of which is the price of energy. Since the misguided decontrol of oil prices, it is not only the globally traded price of fuel but also the exchange rate that determines domestic oil prices.

Negative sentiments and capital outflows impact the stock markets, which may not directly affect the common man but gets reflected as part of negative sentiment in the economy. It widens the current account deficit, which may require dipping into scarce foreign exchange reserves and their 'relative adequacy' could well become 'inadequate' if the deficit continues to widen. One cannot forget the situation of 1991 when India had no other recourse of meeting the deficit by pledging its official levels of gold and seeking commercial loan from International Monetary Fund. There are genuine concerns arising out of a depreciating currency of the domestic economy having larger faith in foreign

rather than the domestic currency and as mentioned previously, the looming fears of currency crisis.

However, a depreciating rupee does make exports cheaper as the same dollar can now get more rupees. But exports are not only a function of prices but other aspects such as quality, ability to meet changing demands and preferences, global demand, efficient logistics, cargo-handling capacities, etc. Response to the historic depreciation of the rupee has, for the first time, tested how much Indian exports are sensitive to prices or can lower prices drive up exports from India. The impact cannot be immediate, of an overnight increase in exports but over a period of time. Many experts feel that the present depreciation is a 'correction' and in the long run help India in achieving 'export (price) competitiveness'. But definitely a slight depreciation can be considered good as long as it is gradual but not such a steep downside in such a short span of time can destabilize the economy.

General Studies Paper- III

Topic: Indian Economy and issues relating to planning, mobilization of resources, growth, development and employment.



SEVEN SUBJECTIVE QUESTIONS WITH MODEL ANSWERS

1. Uncle Sam's New Powerplay in Iran

Q1. The USA has pulled out of the nuclear deal with Iran which was concluded in a multi-lateral agreement in 2015. Highlight the impact of the USA-Iran nuclear deal fall out on India's diplomatic options.

Hints:

- The Trump administration has now pulled out of the deal unilaterally, citing that the agreement was not stringent enough to deter Iran from pursuing hostile nuclear development. Also, the US has threatened to impose fresh and powerful sanctions on Iran, hoping that economic pain would compel Iran to restrain notorious non-compliance.
- The United States, the United Kingdom, France, Russia, China, Germany and the European Union formed a political commitment with Iran in Geneva on July 14, 2015. The Joint Comprehensive Plan of Action, (JCPOA), known as the Iran deal, was neither a treaty nor approved by Congress (U.S. Parliament).
- At the time of the agreement, then-US President Barack Obama's administration expressed confidence that the JCPOA would prevent Iran from building a nuclear programme in secret. Iran, it said, had committed to "extraordinary and robust monitoring, verification and inspection".
- Inspectors from the International Atomic Energy Agency (IAEA), the global nuclear watchdog, continuously monitor Iran's declared nuclear sites and also verify that no fissile material is moved covertly to a secret location to build a bomb.
- Concerns for India: Concerns about the potential impact from US imposing fresh sanctions on Iran - the third largest producer of crude globally - is among the major factors driving up crude prices. India imports nearly 80 percent of its crude requirement from international markets. If sanctions are imposed, Indian companies might have to look for alternate supplies to compensate supplies.
- India's relations with US, Israel, Saudi Arabia: Even as it has sought to enhance ties with Iran post the Obama nuclear deal, India has forged closer relationships with the US, Israel and Saudi Arabia. The latter two have hailed Trump for scrapping the nuclear deal with Iran and this puts India in a very sticky position. Does it follow the US's lead and in turn keep Israel and Saudi Arabia happy or can it strike a delicate balance to maintain all four relationships.
- Chabahar Port Development Project: This project, which is already facing delays, could become a sticking point against India for the US, if New Delhi furthers investments in it. The port is likely to ramp up trade among India, Afghanistan and Iran in the wake of Pakistan denying transit access to New Delhi for trade with the two countries. In February, India and Iran signed a pact that gives New Delhi operational control of a part of port for 18 months.
- Regional Influence: Whatever India decides to do vis-à-vis Iran it will be caught between a rock and a hard place. If it follows the US lead and draws away from Iran, it will leave a hole that China and by association Pakistan, will be only too happy to fill. Already feeling encircled by China's growing influence in the region - especially with Nepal, Sri Lanka and the Maldives - India will not want to lose what little edge it has in maintaining some sort of geopolitical balance.
- India has opted the wait and watch approach for handling the Iran issue and re-balancing its loyalties. To remain on the side of US is beneficial for India, but to have a favourable Iran to have steady oil supply and countering the nuances of Pakistan is also a necessity. The Chabahar port to counter China's influence is though a bit diluted attempt as Iran itself has invited Pakistan and China in Chabahar project. Thus this time of US Iran spat, can be used by India to flex its economic and diplomatic muscle and rebalance its position vis-à-vis Iran.

2. Karl Marx Turns 200

- Q2. Karl Marx has been a major influential thinker who has merged the boundaries of economy, society and politics. He has been an ideologue behind modern socialism. Though not fully applicable, still there are some applications and some shortcomings. Comment.**

Hints:

- Karl Marx was a German philosopher, economist, historian, political theorist, sociologist, journalist and revolutionary socialist. Marx's theories about society, economics and politics—collectively understood as Marxism—hold that human societies develop through class struggle.
- Employing a critical approach known as historical materialism, Marx predicted that, like previous socio-economic systems, capitalism produced internal tensions which would lead to its self-destruction and replacement by a new system: Socialism.
- Socialism is an economic system where everyone in the society equally owns the factors of production. The ownership is acquired through a democratically elected government. It could also be a cooperative or a public corporation where everyone owns shares.
- Socialism assumes that the basic nature of people is cooperative. That nature hasn't yet emerged in full because capitalism or feudalism has forced people to be competitive. Therefore, a basic tenet of socialism is that the economic system must support this basic human nature for these qualities to emerge.
- Marx identified three "cardinal facts" of capitalist production: Concentration of means of production in a few hands, whereby they cease to appear as the property of the immediate labourers and turn into social production capacities; the organisation of labour into social labour: through cooperation, division of labour and the uniting of labour with the natural sciences; and the creation of the world market.
- A fundamental feature of the capitalist system that Marx described and one that has complex social and philosophical underpinnings, is alienation. This does not refer to an isolated experience of an individual person's feeling of estrangement from society or community, but to a generalised state of the broad mass of wage workers.
- Marx's predictions about the future of capitalism were almost entirely wrong. In industrialised countries, workers' real wages have risen and capitalism has not

collapsed. But focusing on this alone overlooks Marx's contribution to analysing freedom in Western society. Freedom was Marx's central concern – paradoxical as this may seem when we look at the regimes that have professed to follow his ideas.

- Common ownership under socialism may take shape through technocratic, oligarchic, totalitarian, democratic or even voluntary rule. Prominent historical examples of socialist countries include the Soviet Union and Nazi Germany. Contemporary examples include Cuba, Venezuela and China.
- While socialism and capitalism seem diametrically opposed, most capitalist economies today have some socialist aspects. Elements of a market economy and a socialist economy can be combined into a mixed economy. And in fact, most modern countries operate with a mixed economic system; government and private individuals both influence production and distribution.

3. Securing Digital Democracy

- Q3. With advancement in information and communication technology the way of nation votes also changes. But with the application of new technology, there are some inherent risks. Discuss.**

Hints:

- The internet has opened up unprecedented possibilities in democratic politics. This is both to the good and, as is increasingly apparent, to the bad. It is difficult to fathom that the same technologies that turbocharged Barack Obama in 2008 and the Arab Spring in 2010 gave birth to the Donald Trump phenomenon and Cambridge Analytica.
- Even though politicians for their campaign still use posters, cut-outs, fliers, graffiti and personal rally's to reach and win over voters but with the social media changing the picture of urban India, political parties are becoming tech savvy and realizing that social media is the only way to reach out to the youth.
- Social media has become an integral part of our lives. Facebook and Twitter tend to provide news faster than most news channels today. Celebrities, sports stars and corporate head honchos are present on these sites so that they can keep in touch with people. They keep their fans and followers informed of latest updates, promote their work and listen to what people have to say.
- Protecting the integrity of elections is a hot topic. From cyber-attacks to fake news influencing public opinion to other forms of external manipulation that could

undermine democracies, voting security has risen to become a top issue for global governments.

- Analytics provide information about potential supporters: where to find them, what's on their minds, what campaign messages they like or don't like, and whether and how much they will donate. As more data is collected from our habits on and offline, it will play an increasingly important role in how political parties campaign and reach voters. Analytics will impact the way campaigns use every channel, from handshaking to social media and television.
- The role of social media, with its dopamine highs, played in Brexit and the 2016 US presidential election are the standout examples, but it goes beyond that. The US military has been experimenting with "computational propaganda" in Cuba and the Middle East. The Russians are developing software for information warfare. Then there are drug cartels in Mexico suppressing Twitter debates. Regimes are busy building digital dictatorships—from China's Citizen Score initiative to Singapore's "data controlled society".
- The very definition of a democratic country is one that conducts free, fair and open elections. The advancement and changes in technology has opened new avenues for mass contact and advertising. The ways to reach the target audience has changed, evolved and enlarged. With this expansion in outreach, the dangers of technology have also percolated into the electoral system. The misuse of technology is not something new to the world. But to take mitigation measures is the need of the hour.

4. Puzzle of Electrification of Villages

Q4. Recently the Union government has claimed 100% electrification of villages. Comment on the given statements and highlight the scope of major schemes meant for rural electrification of villages.

Hints:

- Seven decades after independence and nearly three decades after India's economic liberalisation, present government took great pride in announcing that every village in the country has now been electrified. Leisang in Manipur became the last village to be connected to the grid. All of India's 597,464 census villages have finally got electricity. This marks a milestone in India's history and sets the stage for universal household electrification, with all houses likely to get electricity connections by December 2018. However, that is mostly on paper because, almost 32 million homes remain in the dark.

- The discrepancy between the numbers of villages electrified and the rural households that actually receive electricity could be attributed to the definition of "electrification of a village." According to the current rural electrification policy, a village is declared electrified if 10 percent of its households have electric power.
- Government of India has launched the scheme "Deendayal Upadhyaya Gram Jyoti Yojana" for rural electrification. The erstwhile Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) scheme for village electrification and providing electricity distribution infrastructure in the rural areas has been subsumed in the DDUGJY scheme.
- Pradhan Mantri Sahaj Bijli Har Ghar Yojana – 'Saubhagya' a new scheme was launched by the Hon'ble Prime Minister on 25th September 2017. Under Saubhagya free electricity connections to all households (both APL and poor families) in rural areas and poor families in urban areas will be provided. There are around 4 Crore un-electrified households in the country and they are targeted for providing electricity connections by December 2018. Rural Electrification Corporation (REC) has been designated as its nodal agency for the Saubhagya scheme.
- Scope of the scheme are providing last mile connectivity and electricity connections to all un-electrified households in rural areas, providing Solar Photovoltaic (SPV) based standalone system for un-electrified households located in remote and inaccessible villages/habitations, where grid extension is not feasible or cost-effective and providing last mile connectivity and electricity connections to all remaining economically poor un-electrified households in urban areas. Non-poor urban households are excluded from this scheme.
- While they are chasing village electrification as an interim goal, they have already laid out the goal to electrify each household in the country by March 2019, as part of Saubhagya scheme. But even providing connection to every household will not be sufficient and we need to move towards multi-dimensional definition and measurement of electricity access.
- Despite these challenges, the country has traversed a long, hard, impressive journey towards achieving 100 per cent electrification. In fact, according to the International Energy Agency, by providing energy access to over 500 million people since 2000, India has become one of the greatest-ever success stories in electrification. But with the World Bank is claiming that India topped the list of most power-deficient countries - with Nigeria for company.

5. Multiverse : Myth or Reality?

Q5. Explain the concept of 'Multiverse'. Highlight the plausible arguments for and against the existence of multiverse.

Hints:

- Stephen Hawking has revived debate on a deeply divisive question for cosmologists: Is our Universe just one of many in an infinite, ever-expanding "multiverse"? According to one school of thought, the cosmos started expanding exponentially after the Big Bang. In most parts, this expansion or "inflation" continues eternally, except for a few pockets where it stops. These pockets are where universes like ours are formed – multitudes of them that are often likened to "bubbles" in an ever-expanding ocean dubbed the multiverse.
- Multiverse, a hypothetical collection of potentially diverse observable universes, each of which would comprise everything that is experimentally accessible by a connected community of observers. The multiverse idea has arisen in many versions, primarily in cosmology, quantum mechanics and philosophy and often asserts the actual physical existence of different potential configurations or histories of the known observable universe. The term multiverse was coined by American philosopher William James in 1895.
- There must be more Universe than the part that is observable to us. If you look just at the portion of the Universe we can see, you can measure its spatial curvature and find that it's incredibly close to flat. No regions repeat; no locations connect or loop back on one another; no large-curvature regions show themselves on a scale approaching that of the Universe we can observe. If the Universe were a hyper sphere, the four-dimensional analogue of a sphere, it must have a radius of curvature hundreds of times the size of what we can observe. There must be more Universe out there than what we can access.
- There are at least five theories why a multiverse is possible. These are infinite universes, bubble universes, daughter universes, mathematical universes and parallel universes.
- Not everyone agrees with the parallel universe theory, however. Some physicists agreed that space-time could go on forever in theory, but said that there are some limitations with that idea. The key problem is the universe is just under 14 billion years old. So our universe's age

itself is obviously not infinite but a finite amount. This would (simply put) limit the number of possibilities for particles to rearrange.

- The concept of multiverse has been doing rounds for a couple of years and has kept the cosmologists and the physicists busy for a long period of time. It has been often concluded that the discovery of a multiverse is of no major significance to the field of quantum physics.
- Maybe humanity don't know or is not yet ready to make the use of the concept of multiverse but some generations from now, there could be a possibility of the proverbial teleportation and time travel. Particle Physics as a discipline is more surprising and challenging. Multiverse could open a host of possibilities of bending and molding the rules of the universe that has been existing since many millenials. This could be another leap for a mankind.

6. Extreme Weather Events: The New Normal in India

Q6. What is a dust storm? What are the reasons behind the formation of the dust storm? Examine the impact of dust storms on the human health and environment.

Hints:

- A dust storm is a strong, turbulent wind that carries clouds of fine dust, soil and sand over a large stretch, which mainly occurs in arid and semi-arid regions. In case of a dust storm, due to excessive heating, the water from the clouds evaporates before it could land. So soil is dry and the severe winds lift this soil up to 500 metres above the land. While wind speed is normally around 50 kmph in a thunderstorm, in case of dust storm, it reaches up to 100 kmph and in some cases it can touch 130 kmph, making conditions severe.
- Sand and dust storms are common meteorological hazards in arid and semi-arid regions. They are usually caused by thunderstorms – or strong pressure gradients associated with cyclones – which increase wind speed over a wide area.
- Storms need three things: Moisture, warm temperatures and an agitated atmosphere to push the warm moist air upwards. The unusually high temperatures in northwest India meant that air close to the land surface was pushed upwards where it formed storm clouds. The moisture was provided by easterly winds blowing in from Bay of Bengal.
- Simultaneously, a western disturbance, a system of low pressure, brought moisture from Eurasian water

bodies. In the absence of moisture, the strong upward movement of air would only carry dust and cause dust storms.

- Climate change is leading to a rise in global temperature. According to the NASA the global surface temperature of the Earth in 2017 was the second-warmest in recorded history since 1880. The trend is continuing, the global temperature in January of 2018 was the fifth-highest for that month since 1880. In India, global warming could increase the frequency of storms.
- Airborne dust presents serious risks for human health. Dust particle size is a key determinant of potential hazard to human health. Particles larger than 10 µm are not breathable, thus can only damage external organs – mostly causing skin and eye irritations, conjunctivitis and enhanced susceptibility to ocular infection.
- Surface dust deposits are a source of micro-nutrients for both continental and maritime ecosystems. But dust also has many negative impacts on agriculture, including reducing crop yields by burying seedlings, causing loss of plant tissue, reducing photosynthetic activity and increasing soil erosion. Indirect dust deposit impacts include filling irrigation canals, covering transportation routes and affecting river and stream water quality.
- India could witness an increase in the severity and frequency of dust storms and thunderstorms due to rising global temperatures. The Centre has to raise its game in forecasting and broadcast early warnings. In fact, as the World Meteorological Organisation points out, clarity and frequency of warnings are keys to saving lives.

7. The Looming Fears of Currency Crisis

Q7. Oil is a major part of India's import pie. The rise in oil prices is a huge dent on India's effort to reduce Current Account Deficit (CAD). In the light of this statement discuss the impact of higher oil prices in Indian economy vis-a-vis the depreciation of currency.

Hints:

- The crude oil prices have risen to a multi-year high and the Indian rupee has slumped to a 15 month low in early May 2018. Being a net crude oil importer, India is vulnerable to a sharp rise in prices that will affect the

import bill and disrupt the fiscal position. India's Current Account Deficit (CAD), which was 2% of the GDP in the third quarter of the fiscal year 2017-18, could treble.

- Rising crude oil price has a direct impact on India's GDP. India could be one of the biggest losers in the world if crude oil hits \$85 a barrel. Data from Oxford Economics and Haver Analytics show that if oil price hits even \$85 a barrel, it will impact India's GDP between 0.5% and 1% in next two years.
- The Economic Survey 2018 estimated that a \$10 per barrel increase in the price of oil reduces economic growth by 0.2-0.3 percentage points and worsens the CAD by about \$9-10 billion dollars.
- A weaker rupee and higher oil prices will cause inflation to accelerate, which may prompt the Reserve Bank of India to hike interest rates earlier than expected. Higher domestic rates, coming before the economy has found a stable footing, could also derail India's recovery.
- India is a net importer of oil. It has to buy oil in dollars. Therefore, rising oil prices worsen India's current account and also weaken the Rupee. More Indian's rupees have to be spent on buying oil. The sharp rise in crude prices coupled with Rupee depreciation against the US dollar in addition to other concerns is expected to negatively impact oil marketing companies (OMCs) over the medium term.
- A capital control is another factor affecting rupee value. The decision by the RBI and government to impose temporary restrictions on capital flows has not gone down well with the markets and it will affect domestic companies from investing abroad as well as foreign firms from pumping money in to India. When there is a capital inflow in to the country the demand for currency increases leading to currency appreciation. Capital out flows causes the country's currency to depreciate as supply of its currency decreases and demand for foreign currency increases.
- The rupee's decline affects everyone in the economy because it feeds directly and indirectly into general inflation, which is a continuing problem even as output growth decelerates and therefore hits common people hard. There are several ways in which the falling rupee immediately has an inflationary impact, one of the most important of which is the price of energy. Since the misguided decontrol of oil prices, it is not only the globally traded price of fuel but also the exchange rate that determines domestic oil prices.



SEVEN IMPORTANT NATIONAL & INTERNATIONAL NEWS

NATIONAL

1. India's First Smart Cities Control Centre

In a major step towards realising the centre's Smart City Mission (SCM), the Madhya Pradesh government launched the country's first Integrated Control and Command Centre (ICCC) for all seven smart cities of the state in Bhopal. Bhopal, Indore, Ujjain, Gwalior, Jabalpur, Satna and Sagar are the seven smart cities under Smart City Mission in Madhya Pradesh.

About ICCC

- ICCC is a cloud-based Universal Internet of Things (UIoT) platform developed by Hewlett Packard Enterprise (HPE).
- It can run multiple city command centre operations through its multi-efficiency capabilities.



- The GPS sensors installed in public transport buses, dial 100 vehicles, 108 ambulance services, smart poles, smart lights, traffic management cameras, public bike sharing, solid waste management, meteorological department updates, smart maps etc. would be linked to this centre, enabling the authorities to monitor the status of the civic amenities in real-time.

About Smart City Mission

It was launched in 2014 to develop 100 cities across the country making them citizen friendly and sustainable. These cities will be developed to have basic infrastructure through assured water and power supply, sanitation and solid waste management, efficient urban mobility and public transport, IT connectivity, e-governance and citizen participation.

The implementation of the Mission at the city level will be done by a Special Purpose Vehicle (SPV) created for the purpose. Each smart city will have a SPV which will be headed by a full time CEO and have nominees of Central Government, State Government and ULB on its Board. ■

2. Green License Plates for e-vehicles

To promote electric vehicles in India, the government has approved green license plates bearing numbers in white fonts for private e-vehicles and yellow for taxis. The measure is aimed at promoting e-vehicle's use and the government is considering exemption from permits for such vehicles. The purpose behind distinctive number plates is their easy identification for preferential treatment in parking, free entry in congested zones besides other proposed benefits like concessional toll.

India, currently, has four kinds of number plates-white license plates with numbers on black font for private cars, yellow plates with fonts in black for commercial vehicles, black plates with yellow font letters for self-driven rental vehicles and blue plates with white font letters for Embassies and High Commissions. Army vehicles on the other hand follow a different registration system given by the defence ministry, while vehicles of the President and Governors have red licence plates with the national emblem.

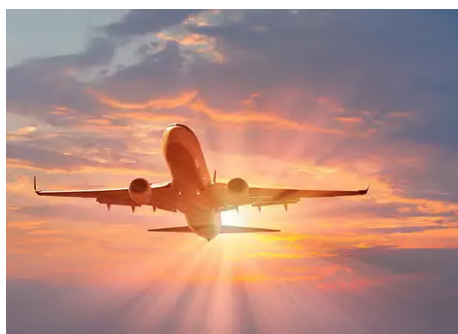
About FAME India Scheme

Government of India has notified FAME India Scheme (Faster Adoption and Manufacturing of Hybrid & Electric Vehicles in India) for implementation with effect from 1st April 2015, with the objective to support hybrid/electric vehicles market development and manufacturing eco-system.

It is a part of the National Electric Mobility Mission Plan. It is being administered by the Heavy Industries Ministry. ■

3. NABH Nirman Initiative

The government is augmenting the airport capacity of various airports as part of NABH (NextGen Airports for Bharat) Nirman initiative. The three key aspects of NABH Nirman are: (1) fair and equitable land acquisition, (2) long-term master plan for airport and regional development (3) balanced economics for all stakeholders. Facilities like improving passenger amenities, promoting cargo handling



facilities and early operationalisation of 56 new airports under UDAN

scheme will be its focus areas while simultaneously working on improving regional connectivity and improving passenger services in a big way.

In the last three years, domestic air passenger traffic grew at 18% a year and the airline companies placed orders for more than 900 aircraft. NABH Nirman could take the number of airports in India to 700 from about 125 airports today. ■

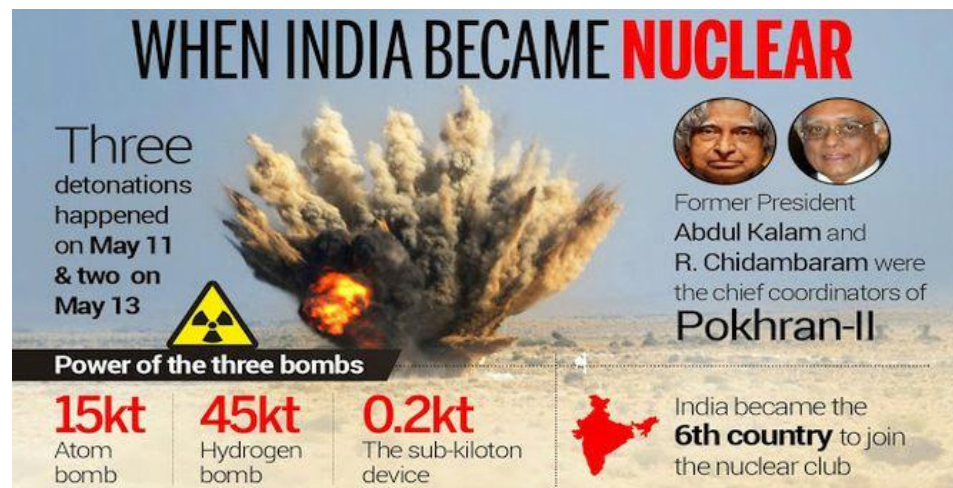
4. National Technology Day

On 11th May, 1998 India achieved a major technological breakthrough by successfully carrying out nuclear tests at Pokhran. Since 1999, May 11 is celebrated as National Technology Day. This day marks the anniversary of Pokhran nuclear tests of 1998 and

India's technological advancements in this space.

Pokhran nuclear tests were a series of five nuclear bomb test explosions conducted by India. On May 11, 1998, India successfully fired Operation Shakti missile at the Indian Army's

Pokhran Test Range in Rajasthan, the first among the five nuclear tests in Pokhran. The test was led by aerospace engineer and late President Dr. APJ Abdul Kalam. Later, Prime Minister Atal Bihari Vajpayee declared India a nuclear state, making it the sixth country to join the 'nuclear club' of nations.



Other Facts

- First, indigenous aircraft "Hansa-3" was test flown at Bangalore on this day and India also performed successful test firing of the Trishul missile on the same day.
- Every year, on this day, the Technology Development Board of India awards various individuals with national awards for their contribution to indigenous technology. ■

5. Domestic Violence Act for Divorced Women Too

The Supreme Court has upheld a ruling that the Domestic Violence Act, meant to punish men who abuse women in a relationship, extends to all man-woman relationships and also protects divorced women from their former husbands. A three-judge Bench of Justices Ranjan Gogoi, R. Banumathi and Naveen Sinha confirmed a Rajasthan High Court ruling of 2013 that the term 'domestic violence' cannot be restrained to

marital relations alone. The court held that domestic violence can continue even after divorce and the reach of the Act should not be shackled by confining only for the protection of women living in marriage.

About Domestic Violence Act

The Protection of Women from Domestic Violence Act (PWDVA), instituted in 2005, is a legislation aimed

at protecting women from violence in domestic relationships. Domestic Violence Act, 2005 is the first significant attempt in India to recognise domestic abuse as a punishable offence, to extend its provisions to those in live-in relationships and to provide for emergency relief for the victims, in addition to legal recourse. It extends to the whole of India except the State Jammu & Kashmir. ■

6. Merchandise Exports from India Scheme

The Director General of Foreign Trade has said that the rates enhanced under the Merchandise Exports from India Scheme (MEIS), a scheme to promote exports, would continue beyond June 30. Continuing the scheme would give



confidence to garment exporters to book orders. The MEIS is among the programmes challenged by the U.S. at the World Trade Organisation and the industry bodies were reviewing them.

About MEIS

- The government of India has introduced Merchandise Exports from India Scheme (MEIS) through the Foreign Trade Policy (FTP) 2015-20 w.e.f. April 1, 2015.
- MEIS is a major export promotion scheme of government implemented by the Ministry of Commerce and Industry.
- Objective of the scheme is to offset infrastructural inefficiencies and associated costs involved in export of goods/products, which are produced/manufactured in India, especially those having high export intensity, employment potential and thereby enhancing India's export competitiveness.
- The reward/incentives provided by the government makes the exporters competitive in the international market including Europe, the United States of America and Africa. ■

7. Overcrowding in Prisons

The Supreme Court has expressed concern about overcrowding in prisons across the country, in some cases beyond 150 per cent of the capacity and asked all the High Courts to consider the issue as it involves "violation of human rights". The apex court requested the Chief Justices of the High Courts to take up the matter as a suo-motu (on its own) writ petition and referred to a note given by an advocate, assisting the court as an amicus curiae, in this regard.

The Centre apprised the court that steps were being taken to encourage setting up of 'open prisons' and a model uniform rules for the administration of open correctional institutions have already been framed. Semi-open prisons or open prisons allow convicts to work outside the jail premises and earn a livelihood and return in the evening. The concept was brought in to assimilate the convicts with the society and reduce their

psychological pressure as they faced lack of confidence in leading normal lives outside.

Overcrowding is one of the biggest problems faced by prison inmates. It results in poor hygiene and lack of sleep among other problems. More than 65% of the undertrials spend three months to five years in jail before getting bail. A fourth of all the under trials have been under detention for more than a year. ■

INTERNATIONAL

1. Lassa Fever

Nigeria has announced that it is free from Lassa fever outbreak. The announcement follows the epidemiological review by the Nigeria

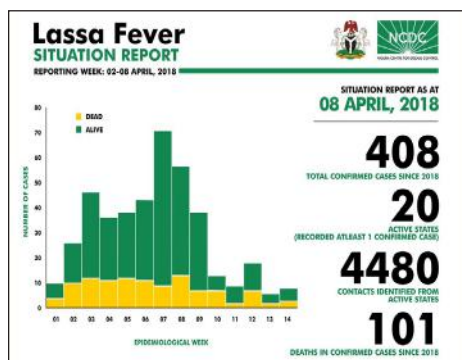
Centre for Disease Control (NCDC) and the World Health Organisation (WHO).

Key Facts

- Lassa fever is an acute viral haemorrhagic illness of 2-21 days duration that occurs in West Africa.
- The Lassa virus is transmitted to humans via contact with food or household items contaminated with rodent urine or faeces.
- Person-to-person infections and laboratory transmission can also occur, particularly in hospitals

lacking adequate infection prevention and control measures.

- Lassa fever is known to be endemic in Benin, Ghana, Guinea, Liberia, Mali, Sierra Leone and Nigeria, but probably exists in other West African countries as well.
- The overall case-fatality rate is 1%. Observed case-fatality rate among patients hospitalized with severe cases of Lassa fever is 15%.
- Early supportive care with rehydration and symptomatic treatment improves survival. ■



2. Pacific Islands Forum given UN Observer Status

The permanent observer status would entrench the presence of the Blue Pacific region in and strengthen its links to the United Nations organisations, including its specialised agencies, programmes, fund initiatives and joint programmes.

About Pacific Islands Forum

Pacific Islands Forum, formerly (1971–2000) South Pacific Forum, organization

established in 1971 to provide a setting for heads of government to discuss common issues and problems facing the independent and self-governing states of the South Pacific. It comprises 18 members: Australia, Cook Islands, Federated States of Micronesia, Fiji, French Polynesia, Kiribati, Nauru, New Caledonia, New Zealand, Niue, Palau, Papua New Guinea, Republic of Marshall Islands, Samoa, Solomon

Islands, Tonga, Tuvalu and Vanuatu. In 2000 Forum leaders adopted the Biketawa Declaration, which was a response to regional political instability and which put forward a set of principles and actions for members to take to promote open, democratic, and clean government, as well as equal rights for citizens regardless of gender, race, colour, creed, or political belief. ■

3. The New Magnetic Event in Near-Earth Environment

Scientists have discovered a new type of magnetic event in our near-Earth environment, by using data provided by a NASA's Magnetospheric Multiscale spacecraft (MMS) spacecraft.

Magnetic reconnection is one of the most important processes in the space – filled with charged particles known as plasma – around Earth. This fundamental process dissipates magnetic energy and propels charged particles, both of which contribute to

a dynamic space weather system that scientists want to better understand and even someday predict, as we do terrestrial weather. Reconnection occurs when crossed magnetic field lines snap, explosively flinging away nearby particles at high speeds.

Magnetic reconnection has been observed innumerable times in the magnetosphere—the magnetic environment around Earth—but

usually under calm conditions. The new event occurred in a region called the magnetosheath, just outside the outer boundary of the magnetosphere, where the solar wind is extremely turbulent. Previously, scientists didn't know if reconnection even could occur there, as the plasma is highly chaotic in that region. MMS found it does, but on scales much smaller than previous spacecraft could probe. ■

4. NAFTA Deal

Negotiators have failed to reach NAFTA deal. Negotiators have ended talks without a deal to modernize NAFTA, agreeing instead to resume negotiations soon, ahead of a deadline next week issued by U.S House of Representatives. The failure to secure a quick deal underscores uncertainty over the North American Free Trade Agreement. Mexico has not agreed to a

U.S. proposal to boost North American content for autos made in the NAFTA region, one of the main sticking points.

Trump has called NAFTA the “worst trade deal in history” and blames it for the loss of manufacturing jobs in America’s Rust Belt.

About NAFTA

The North American Free Trade

Agreement, which eliminated most tariffs on trade between Mexico, Canada and the United States, went into effect on Jan. 1st, 1994. Negotiations for the trade agreement began in 1990 under the administration of George H.W. Bush and were finalized under Bill Clinton’s presidency in 1993. The agreement went into effect on January 1st, 1994. ■

5. Global Environment Compact

The UN General Assembly adopted a resolution to set up a working group for negotiations aimed at creating a Global Pact for the Environment, a legally binding international instrument. The resolution sponsored by France won the support of 143 countries. Iran, the Philippines, Russia, Syria, Turkey and the United States voted against it. Six other countries abstained while several states did not vote.

Key Points

- The resolution requests UN Secretary-General Antonio Guterres to submit to the General Assembly a report that identifies and assesses possible gaps in international environmental law.
- It decides to establish an ad hoc open-ended working group to consider the report and if deemed

necessary, to consider the scope, parameters and feasibility of a global pact for the environment.

- The resolution requests the current President of the General Assembly to appoint two co-chairs of the working group — one from a developing country and one from a developed country — to oversee its consultations. ■

6. Nasa’s Mars Helicopter

Nasa is working toward a future when humans will walk on the surface of Mars. But first it’s going to try flying a drone through the air. The Mars Helicopter, a small, self-flying aircraft designed specifically for the Red Planet, will be included in the space agency’s next rover mission in 2020 to beam back a birds-eye view of Martian terrain.

The helicopter also contains built-in capabilities needed for operation at Mars, including solar cells to charge its lithium-ion batteries and a heating mechanism to keep it warm through the cold Martian nights. But before the helicopter can fly at Mars it has to get there. It will do so attached to the belly pan of the Mars 2020 rover.

About Mars 2020

The Mars 2020 rover mission is scheduled to launch in July 2020 from Cape Canaveral Air Force Station in Florida and reach Mars in February 2021. The rover is designed to carry out geological studies and ascertain the habitability of the Martian environment. The rover will conduct geological assessments of its landing site on Mars. ■

7. Organisation of Islamic Cooperation

Bangladesh and Turkey have proposed restructuring of the charter of the Organisation of Islamic Conference (OIC) to pave way for inclusion of non-Muslim countries like India as an “observer state”. The two countries have joined hands to seek reforms of the 57-nation grouping including a suggestion to concede the demand

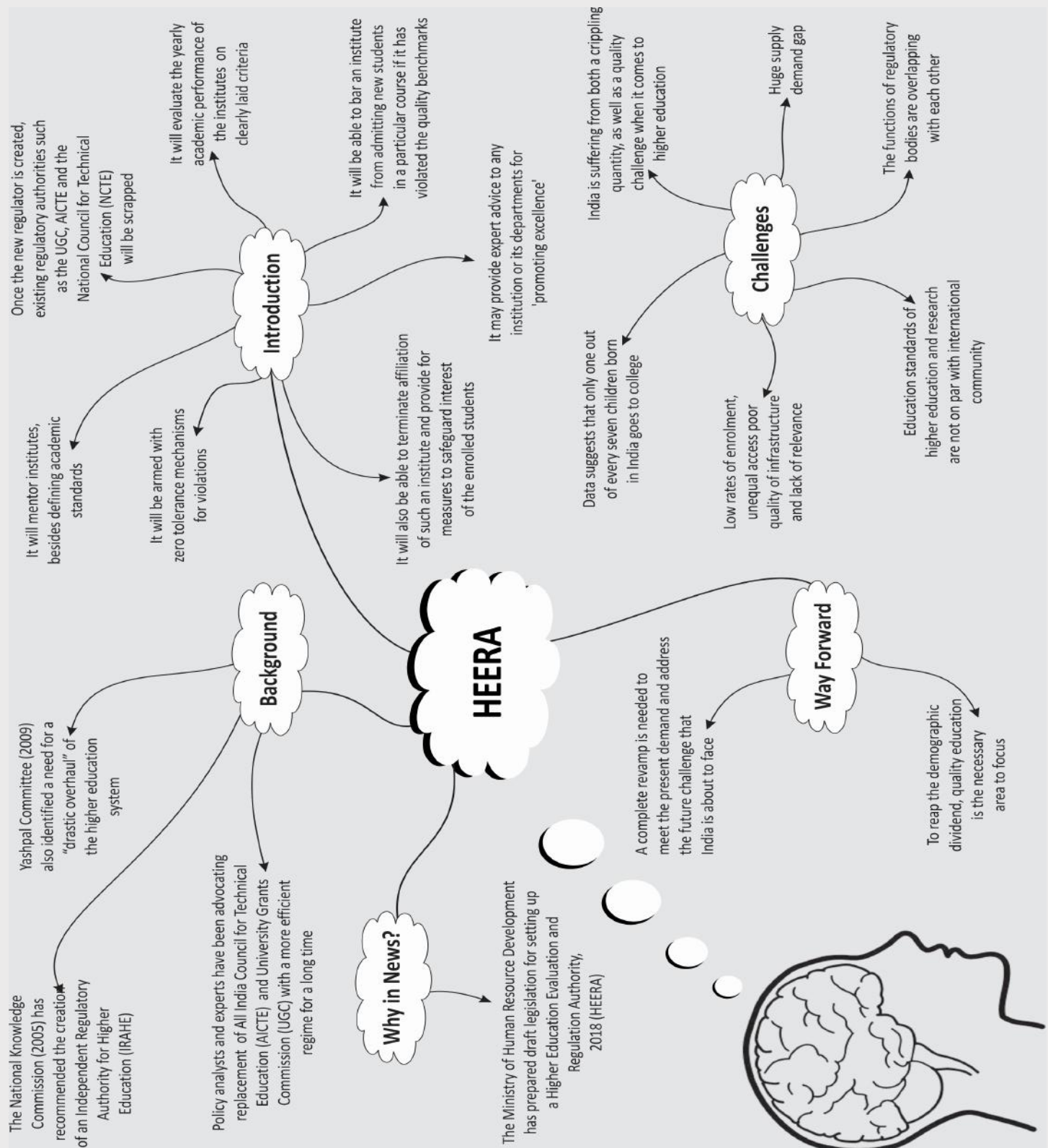
of India, which is home to the world’s third largest Muslim population.

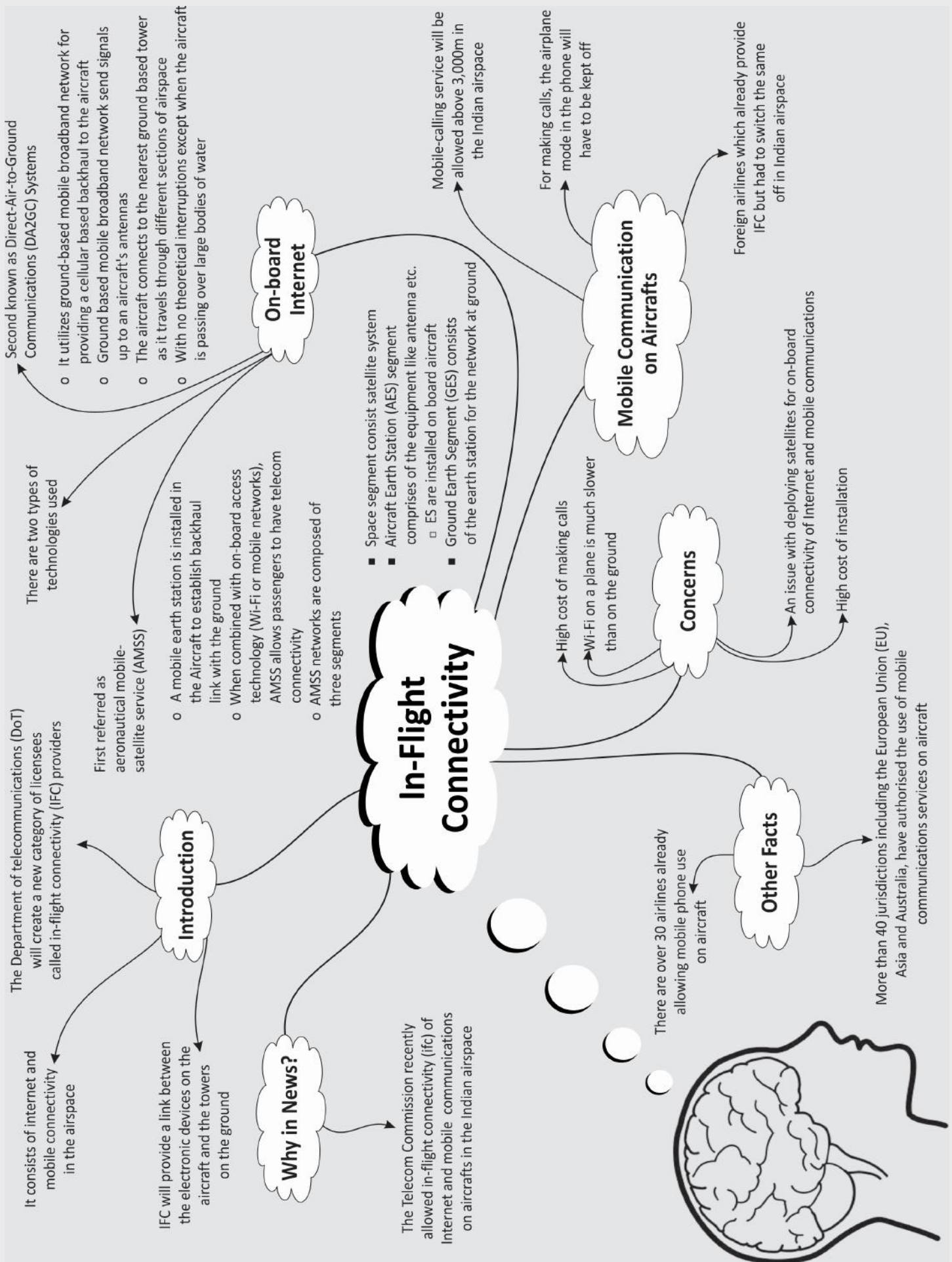
About OIC

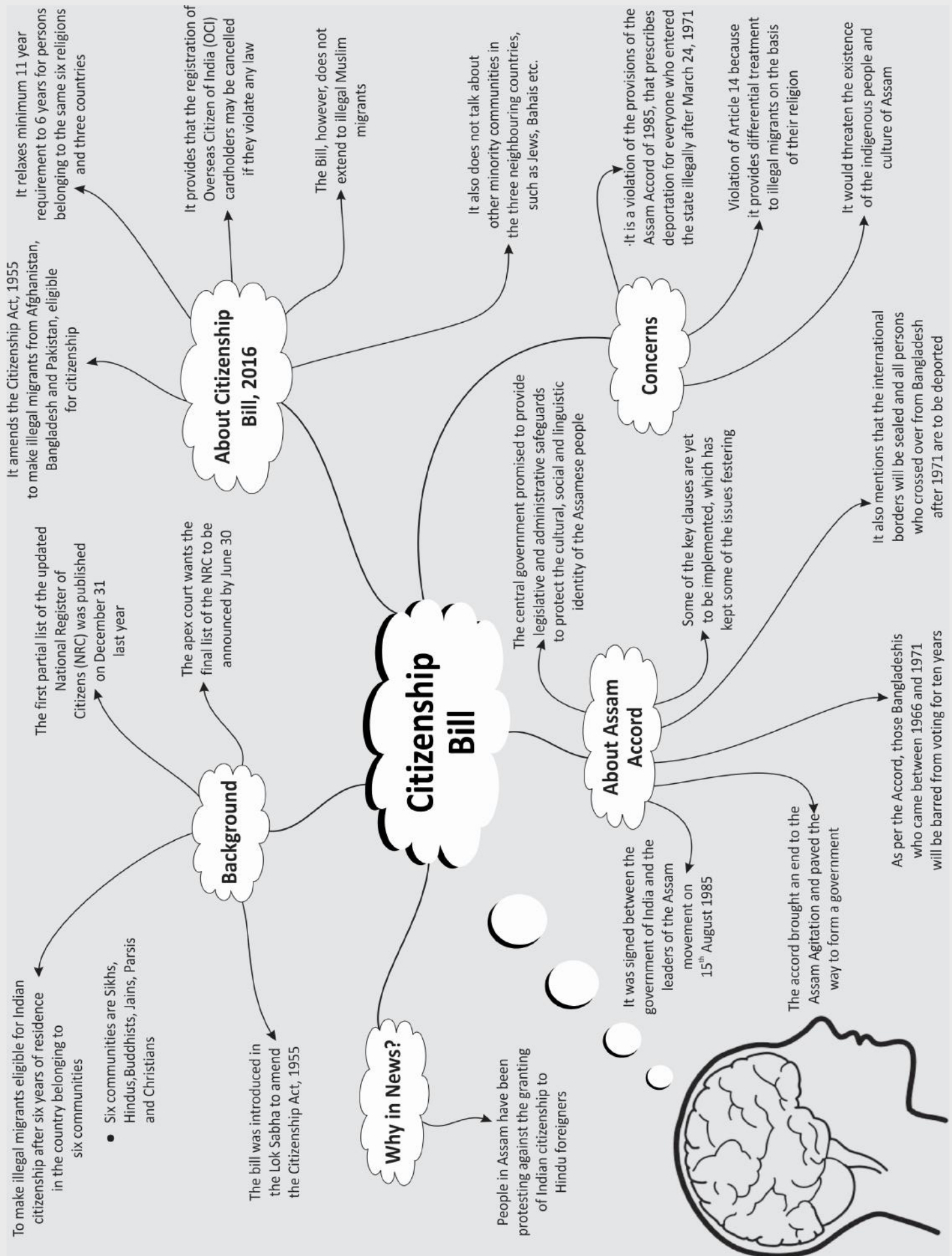
The Organization was established upon a decision of the historical summit which took place in Rabat, Kingdom of Morocco on 25th September 1969 following the criminal arson of Al-Aqsa Mosque in occupied Jerusalem. It is

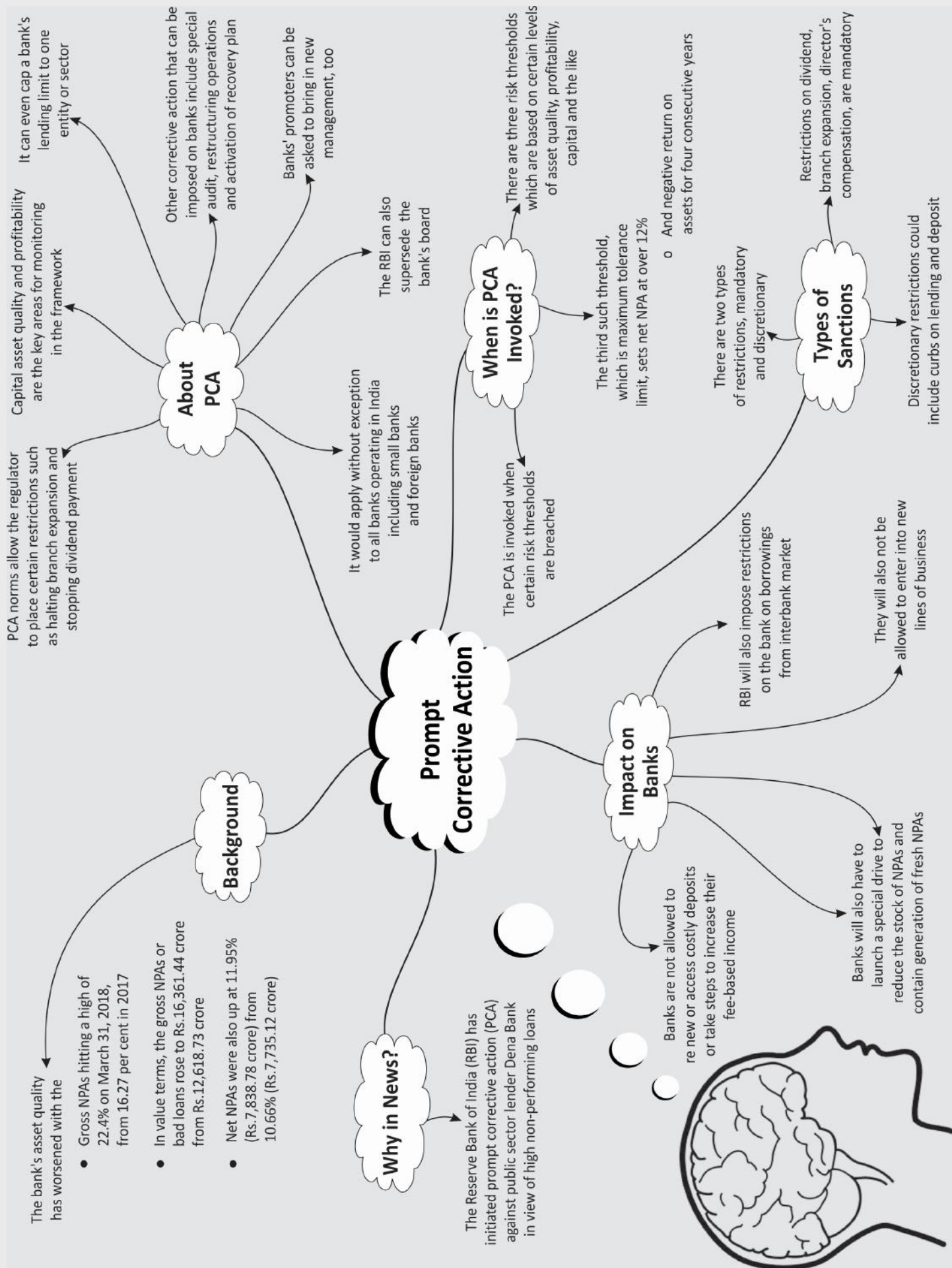
the second largest inter-governmental organization after the United Nations with a membership of 57 states spread over four continents. The organization is the collective voice of the Muslim world. It endeavors to safeguard and protect the interests of the Muslim world in the spirit of promoting international peace and harmony among various people of the world. ■

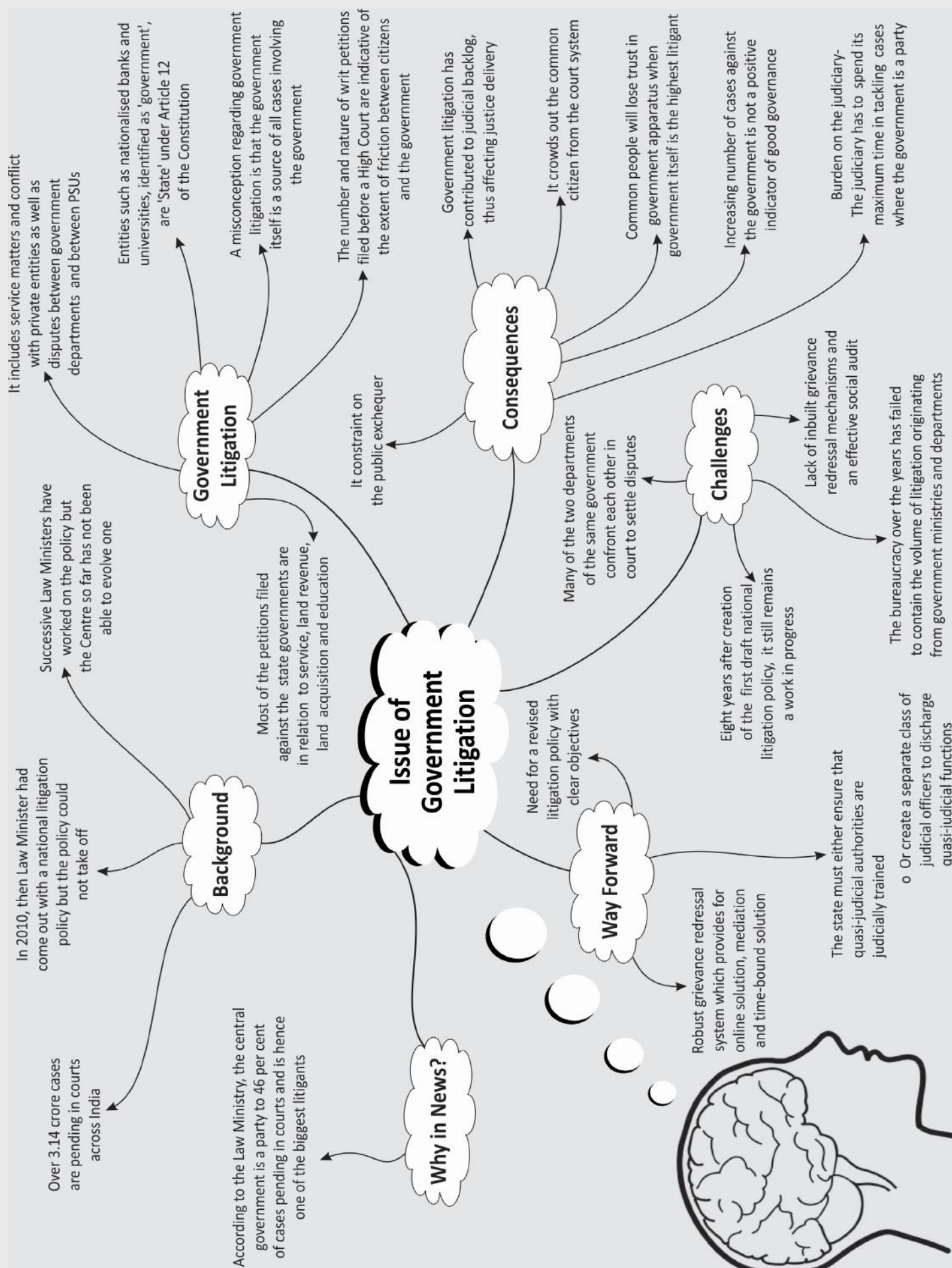
SEVEN BRAIN BOOSTERS

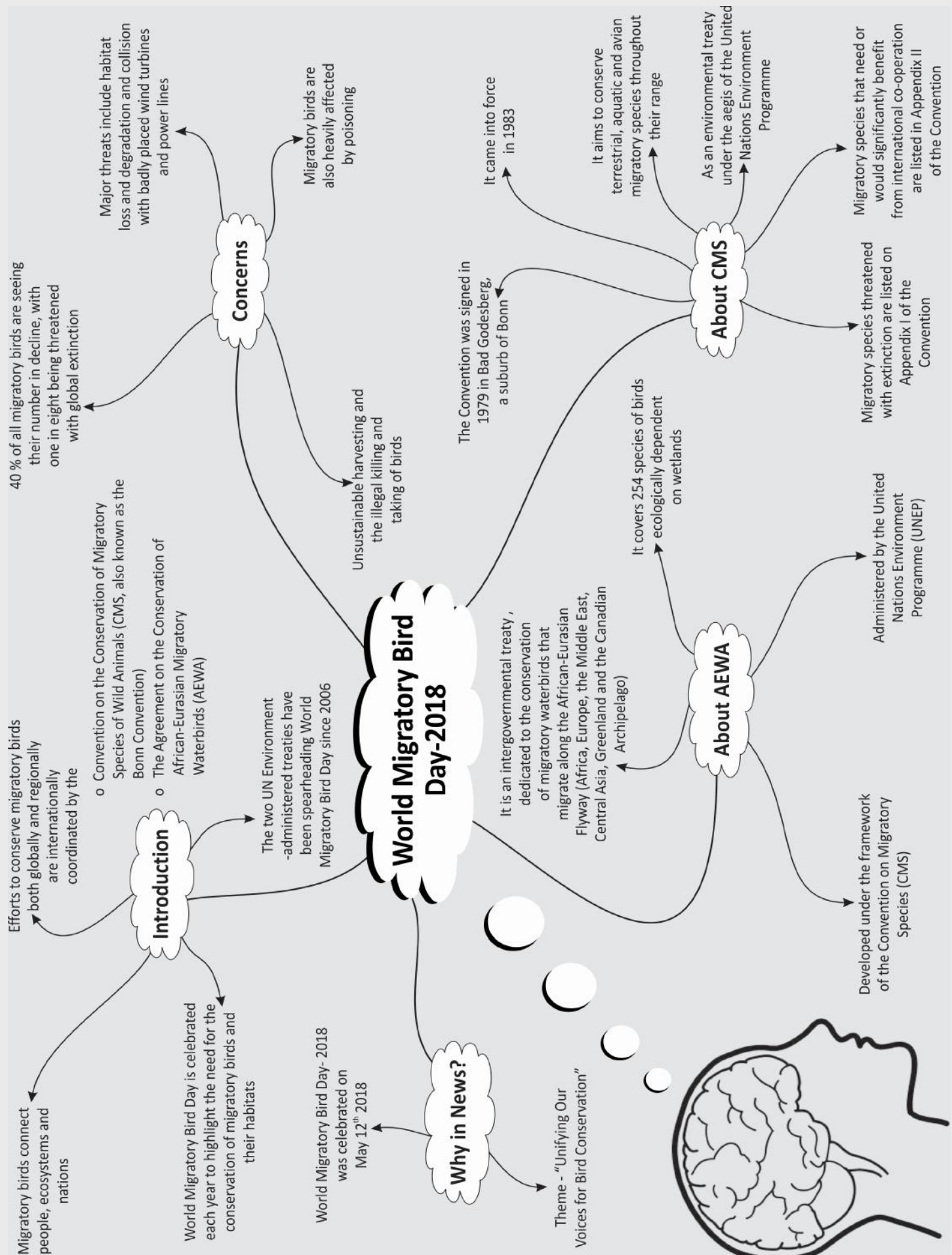


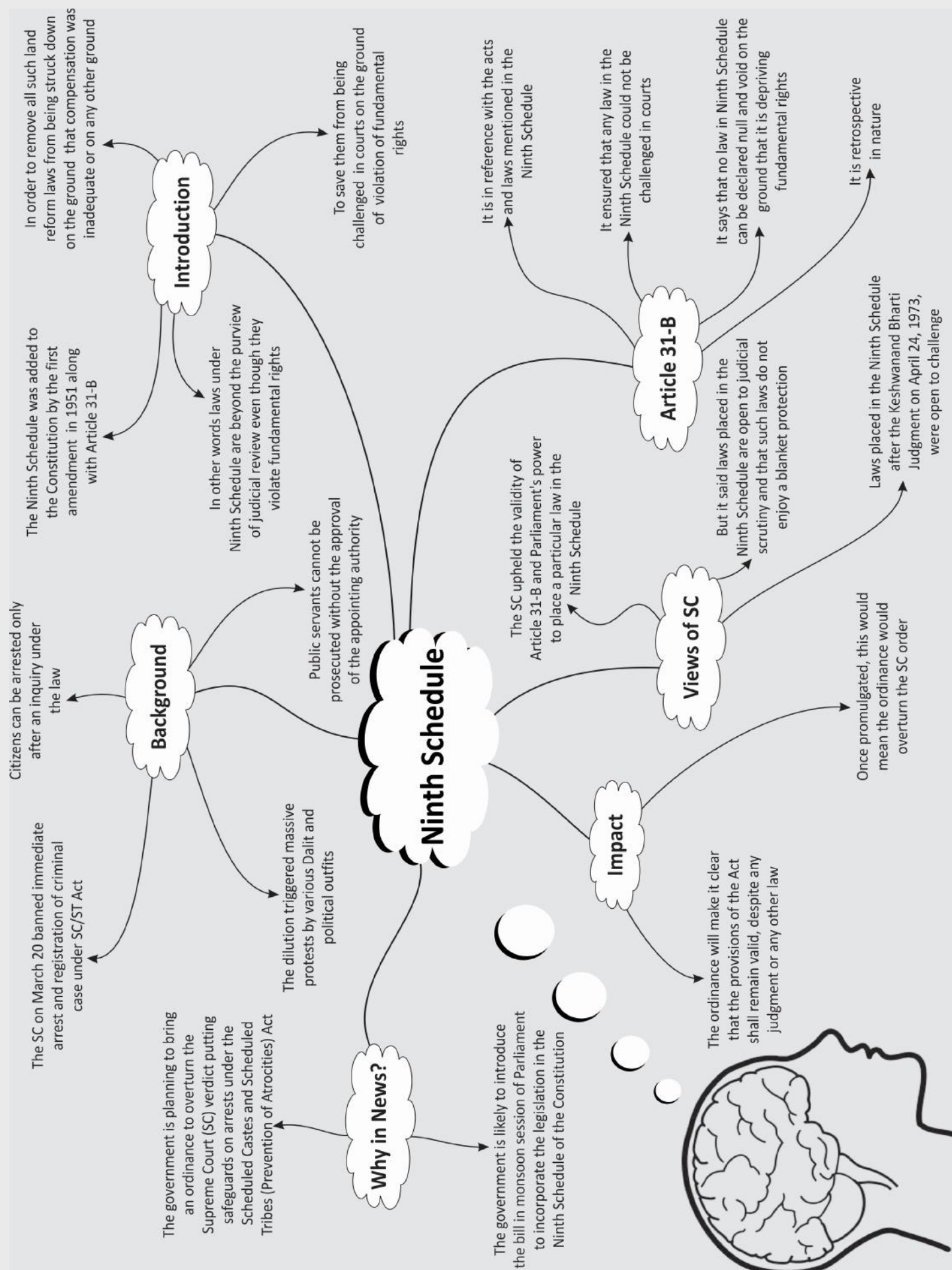












SEVEN MCQ's WITH EXPLANATORY ANSWERS

(Based on Brain Boosters)

HEERA

Q1. Consider the following statements in respect of newly proposed 'Higher Education Evaluation and Regulation Authority 2018 (HEERA):

1. It will be a single regulator to govern the higher education in India.
2. It will focus on setting quality standards for institutions and evaluate the yearly academic performance of the institutes on clearly laid criteria.

Which of the statements given above is/are correct?

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

Answer: (c)

Explanation:

Both statements are correct. The Ministry of Human Resource Development has prepared draft legislation for setting up a Higher Education Evaluation and Regulation Authority, 2018 (HEERA). Once the new regulator is created, existing regulatory authorities such as the University Grants Commission (UGC), All India Council for Technical Education (AICTE) and the National Council for Technical Education (NCTE) will be scrapped.

The new authority will focus on setting quality standards for institutions, specify learning outcomes, lay down standards of teaching assessment and research and evaluate the yearly academic performance of the institutes on clearly laid criteria.

In-Flight Connectivity

Q2. With reference to the 'In-flight Connectivity', consider the following statements:

1. The Telecom Commission allowed in-flight connectivity of Internet and mobile communications on aircraft in Indian airspace.
2. In-flight connectivity systems primarily use two kinds of technologies- satellite and Direct-Air-to-Ground Communications.

Which of the statements given above is/are correct?

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

Answer: (c)

Explanation:

Both statements are correct. Telecom Commission, the highest policy making body of Department of Telecom (DoT), on May 1 cleared a proposal for allowing wider in-flight connectivity that is now available in most of the developed markets. The decision will pave the way for travellers to use internet and voice services on mobile phone during flights in the Indian airspace.

In-flight connectivity systems primarily use two kinds of technologies. First technology is referred as Aeronautical Mobile-Satellite Service (AMSS). A mobile earth station is installed in the Aircraft to establish backhaul link with the ground. When combined with on-board access technology (Wi-Fi or mobile networks), AMSS allows passengers to have telecom connectivity. And second technology is known as Direct-Air-to-Ground Communications (DA2GC) systems. Direct-Air-to-Ground Communications (DA2GC) systems utilizes ground-based mobile broadband network for providing a cellular based backhaul to the aircraft.

Citizenship Bill

Q3. Consider the following statements:

1. The Citizenship Amendment Bill, 2016 seeks to allow all illegal migrants from Afghanistan, Bangladesh and Pakistan eligible for Indian citizenship.
2. Article 14 guarantees equality to all persons, citizens and foreigners.

Which of the following statements given above is/are correct?

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

Answer: (b)

Explanation:

Statement 1 is not correct. The Citizenship Amendment Bill, 2016 seeks to allow illegal migrants from six minority communities namely Hindus, Sikhs, Buddhists, Jains, Parsis and Christians in Afghanistan, Bangladesh and Pakistan eligible for Indian citizenship. In other words, it amends the Citizenship Act of 1955.

Statement 2 is correct. The Bill provides that illegal migrants belonging to specified minority communities from Afghanistan, Bangladesh or Pakistan will not be treated as illegal migrants under the Act, making them eligible for Indian citizenship. This implies that illegal migrants from these countries who are Muslims, other minorities who do not belong to the above groups (eg. Jews) will not be eligible for citizenship. This provision violates the right to equality guaranteed under Article 14 of the Constitution because it provides differential treatment to illegal migrants on the basis of their religion. Article 14 guarantees equality to all persons, citizens and foreigners.

Prompt Corrective Action

Q4. 'Prompt Corrective Action (PCA)' is sometimes mentioned in the news. Consider the following statements in this regard:

1. It is triggered when banks breach certain regulatory requirements like minimum capital, return on asset and quantum of non-performing assets.
2. It would apply only to the Indian banks (both public sector banks and private sector banks).

Which of the statements given above is/are correct?

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

Answer: (a)

Explanation:

Statement 1 is correct. It is triggered when banks breach certain regulatory requirements like minimum capital, return on asset and quantum of non-performing assets. A bank will be placed under PCA framework based on the audited Annual Financial Results and the Supervisory Assessment made by RBI. However, RBI may impose PCA on any bank during the course of a year.

Statement 2 is not correct. The PCA framework would apply without exception to all banks operating in India including small banks and foreign banks operating through branches or subsidiaries based on breach of risk thresholds of identified indicators.

Issue of Government Litigation

Q5. Consider the following statements:

1. Entities such as nationalised banks and universities, identified as 'government', are 'State' under Article 12 of the Constitution.
2. According to the Law Ministry, the central government is one of the biggest litigants in the country.

Which of the statements given above is/are correct?

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

Answer: (c)

Explanation:

Both statements are correct. According to Article 12 of the Constitution of India, the term 'State' denotes the Union and state governments, the Parliament and state legislatures and all local or other authorities within the territory of India or under the control of the Indian government.

According to the Law Ministry, the central government is a party to 46 per cent of cases pending in courts and is hence one of the biggest litigants, a tag it wants to shed.

World Migratory Bird Day-2018

Q6. With reference to the 'World Migratory Bird Day-2018', consider the following statements:

1. The two treaties namely International Union for Conservation of Nature and the Convention on the Conservation of Migratory Species of Wild Animals are associated with conservation of migratory birds.
2. "Unifying Our Voices for Bird Conservation" is the theme of World Migratory Bird Day-2018.

Which of the statements given above is/are correct?

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

Answer: (b)

Explanation:

Statement 1 is not correct. The two UN Environment-administered treaties namely the Conservation of Migratory Species of Wild Animals (CMS, also known as the Bonn Convention) and the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) have been spearheading World Migratory Bird Day since 2006.

Ninth Schedule

Q7. Consider the following statements in respect of 'Ninth Schedule' of the Constitution:

1. The Ninth Schedule was added to Constitution by the first constitutional amendment act in 1951.
2. Laws inserted in the Ninth Schedule enjoy absolute immunity from judicial review.

Which of the statements given above is/are correct?

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

Answer: (a)

Explanation:

Statement 1 is correct. The Ninth Schedule was added to the Constitution by the first amendment in 1951 along with Article 31-B with a view to provide a "protective umbrella" to land reforms laws to save them from being challenged in courts on the ground of violation of fundamental rights.

Statement 2 is not correct because laws inserted in the Ninth Schedule though enjoy higher immunity to judicial review than other laws, but there is no provision for absolute immunity to laws. In 2007, a nine-judge Bench of the Supreme Court in a historic judgment said that since there is no specific criterion for insertion of a law in the Ninth Schedule, the laws cannot enjoy absolute immunity and hence are subjected to judicial review.

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SEVEN IMPORTANT FACTS FOR PRELIMS

1. The world's second oldest rock was discovered in which country?

- India

2. Who was conferred with the 11th KISS Humanitarian Award 2018?

- Muhammad Yunus

3. Which was the world's largest remittance-receiving country in 2017, as per 'RemitSCOPE – Remittance markets and opportunities – Asia and the Pacific'?

- India

4. According to a new report, which state is currently experiencing an advanced demographic transition?

- Kerala

5. Which country launched new satellite to monitor air pollution?

- China

6. Who was elected as the new Prime Minister of Malaysia?

- Mahathir Bin Mohamad

7. Which country is going to launch nationwide inspections targeting illegal dumping of waste?

- China

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SEVEN PERFECT QUOTES

(IMPORTANT FOR ESSAY AND ANSWER WRITING)

1. "Priorities need to change at different stages of our life if we want to grow and evolve."

– *Apurva Purohit*

2. "The focus is what is right before you- to give it your best. It sows the seeds of tomorrow".

– *Kiren Bedi*

3. "There might be different perspectives, opinions and ways of doing the same thing. But when it comes to ethics, there can be no two ways of looking at it."

– *Mallika Srinivassan*

4. "No one gets to the top, if they sit on the sidelines, or if they don't believe in themselves."

– *Sheryl Sandberg*

5. "Nothing in life is to be feared. It is only to be understood."

– *Marie Curie*

6. "Destiny is a name often given in retrospect to choices that had dramatic consequences."

– *J. K. ROWLING*

7. "Dreams and reality are opposites. Action synthesizes them."

– *Assata Shakur*

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SEVEN PRACTICE QUESTIONS FOR MAIN EXAM

Answer each of the following questions in 200 words:

- Q1. India's regional reset won't be complete without a change in its Pakistan policy. Comment.
- Q2. What is Google Duplex? Discuss features of Google Duplex which makes it a revolutionary artificial intelligence technology.
- Q3. In a country where two-thirds of the population is denied access to quality healthcare today. Critically analyse whether making healthcare affordable through capping of prices would solve the problem of Out of Pocket Expenditure in health in India?
- Q4. Despite being a benchmark of agricultural growth during the green revolution, agriculture sector is undergoing a phase of declining farm profitability and increasing indebtedness. Examine.
- Q5. The banking sector should be allowed to grow its balance sheets and do business with reference to the bottom lines. Discuss whether priority sector lending norms need to be done away with?
- Q6. What do you understand by open source intelligence(OSI). Discuss the key ethical issues associated with it.
- Q7. How globalisation has led to the reduction of employment in both formal and informal sector of the Indian economy? Is increased informalisation detrimental to the development of the country?

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