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CURRENT AFFAIRS

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SEVEN IMPORTANT ISSUES

I. GIANT MNCs vs DEVELOPING AND UNDERDEVELOPED ECONOMIES

Why in News?

Recently, US retail giant Walmart buys 77% in India's top e-commerce firm Flipkart, valuing it at \$ 21 billion. The corporate world is always abuzz of various take-overs and mergers. Be it Vodafone-Esaar, Tata-Corus or Google buying a part of HTC Team, there have been movers and shakers in corporate world. All the entities involved are "giant multinational corporations/ companies", whose financial transactions resonate across many nations and affect customers who are spread across many nations. The MNCs (Multinational Companies/ Corporations) are the product of modernity. They never used to exist in ancient and medieval times. But in modern times, they have been a major influencing factor for changing tastes and preferences of nations as whole, entities who can harness the global spread of man-material-money and can also pose dangerous economic entities threatening local markets and production centers. Knowing about these economic giants affecting populations and nations is a must for any informed global citizen.

What are MNCs?

As the word very well suggests, MNC is a company that owns or controls production in more than one nation.

MNCs set up its offices and factories for production in regions where they can get cheap labor and other resources. MNCs go for such multi-nation location so as to avail low cost of production thus earning greater profits.

A "multinational corporation" is also referred to as an international, transactional or global corporation. For enlarging the business firm, multinational is a beginning step, as it helps you become transnational thus leading you to go global.

From National to Multinational

A company goes international for various reasons:

- (1) Firstly, the MNC can sell its products in the vast global market.
- (2) Secondly, it can raise money for its operations throughout the world.
- (3) Thirdly, they are able to establish production facilities in countries where labour cost is low and raw materials are abundant in supply.

In fact, global firms have greater access to various natural resources and raw materials than domestic firms. This enables them to carry on production most effectively and efficiently.

- (4) Finally, MNCs can employ efficient managers by being able to recruit the most technically qualified and managerially efficient people from the whole world.

There are various reasons for the growth of multinationals. Firstly, exporting may not be the best alternative because of trade barriers, perishability, or a need to produce a product tailored to the local market. No doubt, investing in a firm by purchasing stock or making loans appears to be an easy solution.

But often the firm wants greater control over management, product quality and patented processes. Sometimes the only way to get access to needed local resources, especially raw materials, is to build a local plant. However, trade barriers or the needs

Big Strides Forward



IN 2017, WALMART COMPLETED \$3-BILLION ACQUISITION OF JET.COM

Deal with Flipkart seeks to leverage technological synergies between the two

Flipkart has a war chest of around \$4 b after the latest round of fund infusion from SoftBank

Deal with Walmart will further strengthen its cash pile & help it compete with Amazon



Deal could be finalised by March. It may involve primary & secondary sales by some long-standing investors



For last five years, Walmart is on an ecommerce acquisition spree, buying 15 startups

of the local (foreign) market are much more common reasons for building foreign plants than the attraction of cheap labour.

From Ethnocentric to Geocentric Orientation

In the 1950s and 1960s, MNCs adopted an ethnocentric outlook; that is, the orientation of the foreign operation was based on that of the parent company. The modern MNC has a geocentric orientation.

This simply means that the whole organized is treated as an interdependent system operating in many countries. In other words, the orientation of the MNC is truly international and goes beyond a narrow nationalistic view point.

Growth of MNCs

As the world economy is opening up with a fall in regulatory barriers to foreign investment, better transport and communications, freer capital movements, etc., international companies are finding it easier to invest where they choose to cheaply, and with less risk.

Moreover, the developing countries no longer consider the presence of MNCs to be synonymous with a loss of their sovereignty. It is now realized that MNCs are merely a part of a much wider force that is integrating the world economy.

Whether this trend will last or not will depend chiefly on the liberalization policies of the governments of the developing countries, who are responsible for allowing entry to the MNC's into their home economies and who can re-impose the barriers if they so wish.

Liberalization as regards foreign investment would last as long as the governments of these developing countries believe that it is beneficial for them.

However, the biggest danger lies in the excessive expectations of the liberalizing governments, as many of them see foreign investment as a short-cut to prosperity, capital and technology transfer and skill enhancement. MNCs do bring in these assets to an extent, but these alone cannot make up for all the shortcomings of the host economy.

Effects of MNCs

Multinationals are often accused by their critics of shifting competition in the countries in which they locate, creating balance of payments problems and leading to undue concentration of economic and political power at home and abroad. Advocates argue that they often increase competition, accelerate the transfer of financial capital and modern technology and help promote free multi-lateral trade.

Competition

In some cases, the multinational 'shakes up' sleepy domestic competitors, forcing them to try harder when they can no longer hide behind a protective tariff wall. On the other hand, multinationals often simply buy out local competitors or keep local competition from developing. Sometimes multinationals increase competition and at other times they reduce it.

Transfer of Technology

Multinationals speed up flows of technology between (among) countries. They use processes and methods that the firm would not share with a competitor but will make available to its own subsidiaries.

Less developed countries like India often argue that this transfer does not spill over to other industries for maximum benefit. They also argue that multinationals, which are generally from developed industrial countries, don't try very hard to adapt technology to the local mix of available resources.

From Multinational to Global or Transnational Corporations

Of late we observe the shift of emphasis in the area of international business. By now MNCs have now realized that it is not enough to operate in different countries.

It is not even sufficient to establish manufacturing plants in several countries (as Ford and Exxon have done) to remain internationally competitive. The shift is toward the global or transnational corporation, which views the whole world as one market. This means that the MNCs have to develop new products with the whole world in mind. This means that a corporation has to adapt itself to national and even local needs in order to survive and grow in today's dynamic world characterized by increasing nationalism in many countries as also acquisition of new skills by such countries and frequent and often unpredictable changes in government policies in host countries.

Impact of dealon

- Indian Retail industry- e-commerce
- Indian economy

Advantages of MNCs

- **Access to Consumers:** Access to consumers is one of the primary advantages that the MNCs enjoy over companies with operations limited to smaller region. Increasing accessibility to wider geographical regions allows the MNCs to have a larger pool of potential customers and help them in expanding, growing at a faster pace as compared to others.
- **Accesses to Labor:** MNCs enjoy access to cheap labor, which is a great advantage over other companies. A firm having operations spread across different geographical areas can have its

production unit set up in countries with cheap labor. Some of the countries where cheap labor is available is China, India, Pakistan etc.

- **Taxes and Other Costs:** Taxes are one of the areas where every MNC can take advantage. Many countries offer reduced taxes on exports and imports in order to increase their foreign exposure and international trade. Also countries impose lower excise and custom duty which results in high profit margin for MNCs. Thus taxes are one of the area of making money but it again depends on the country of operation.
- **Overall Development:** The investment level, employment level and income level of the country increases due to the operation of MNC's. Level of industrial and economic development increases due to the growth of MNCs.
- **Technology:** The industry gets latest technology from foreign countries through MNCs which help them improve on their technological parameter.
- **R&D:** MNCs help in improving the R&D for the economy.
- **Exports & Imports:** MNC operations also help in improving the balance of payment. This can be achieved by the increase in exports and decrease in the imports.
- MNCs help in breaking protectionism and also helps in curbing local monopolies, if at all it exists in the country.

Disadvantages of MNCs for the Host Country

- **Laws:** One of the major disadvantages is the strict and stringent laws applicable in the

country. MNCs are subject to more laws and regulations than other companies. It is seen that certain countries do not allow companies to run its operations as it has been doing in other countries, which result in a conflict within the country and results in problems in the organization.

- **Intellectual Property:** Multinational companies also face issues pertaining to the intellectual property that is not always applicable in case of purely domestic firms.
- **Political Risks:** As the operations of the MNCs are wide spread across national boundaries of several countries they may result in a threat to the economic and political sovereignty of host countries.
- **Loss to Local Businesses:** MNCs products sometimes lead to the killing of the domestic company operations. The MNCs establish their monopoly in the country where they operate thus killing the local businesses which exists in the country.
- **Loss of Natural Resources:** MNCs use natural resources of the home country in order to make huge profit which results in the depletion of the resources thus causing a loss of natural resources for the economy.
- **Money Flows:** As MNCs operate in different countries a large sum of money flows to foreign countries as payment towards profit which results in less efficiency for the host country where the MNCs operations are based.
- **Transfer of capital** takes place from the home country to the foreign ground which is unfavorable for the economy.

The Walmart-Flipkart Deal

The \$1-billion online grocery space is all set for the big battle, with deep-pocketed players signalling expansion and strengthening of operations. Walmart's recently-acquired 77% stake in Flipkart could lead to a larger focus on the food and grocery segment, currently led by Bigbasket with a 37-40% marketshare, followed by Amazon, Grofers and Flipkart. The deal, which will see founder Sachin Bansal exit completely, will now pit US-based giants Walmart and Amazon in the Indian market. The deal is going to shake things up. The world's biggest retail deal will impact the whole segment, the competitors and the consumers.

Walmart has for years tried to enter India but has remained confined to a 'cash-and-carry' wholesale business amid tough restrictions on foreign investment. It currently operates 21 such stores in India.

Flipkart is being positioned as the arrowhead for Walmart to have another crack at the Indian market, four years after it broke its joint venture with Bharti for a cash-and-carry business. This time around, Walmart's choice in India is starkly different. While Flipkart has absorbed billions of dollars of investor money to rapidly grow its business, its main bait has been deep discounts. Walmart's investment would give Flipkart not just additional funds to fight Amazon, but also arm it with a formidable ally with extensive experience in retailing, logistics and supply chain management.

Grocery is touted as the fastest growing segment within e-commerce. Experts see Walmart becoming the biggest disruptor in this space and providing a big push to online grocery retail. Walmart is a global leader in grocery sales. Its online foray in the

US is about to reach 40% of homes. Its strength in fresh grocery supply chain management will be the game-changer in the category, in India. Apart from giving Amazon a run for its money in this area, Walmart will also hit retailers like Bigbasket and Grofers. Now you have the likes of Alibaba and Walmart betting big on the India market and the return on investment they can get from here.

Bright Side of the Deal

The battle between Amazon and Flipkart for leadership in the Indian market will grow more intense with Walmart buying into Flipkart. Amazon has committed investments to the tune of \$5 billion for its operations in India. In a recent investor call, Amazon CFO Brian Olsavsky said the company would continue to invest in India as it saw great progress with both sellers and customers here.

The war between Flipkart and Amazon will not only create a vast infrastructure of supply chain but also a large number of jobs.

India's total consumption is expected to rise to \$3.6 trillion in 2027 from \$1.3 trillion in 2016, according to industry data. The retail market is expected to hit \$1.8 trillion from \$650 billion in 2016. Of this, the biggest driver is expected to be food and grocery, pegged at \$1.1 trillion in 2027 from \$420 billion in 2016, which will drive a separate and similarly substantial investment by Walmart in agriculture.

Agriculture and infrastructure sectors will get a big boost due to competition between Flipkart and Amazon. Farmers will benefit from increasing demand. It can also boost overall consumer demand.

The Flipkart-Walmart deal will be the latest – and possibly the most

powerful –trigger for a fresh wave of employee interest in the e-commerce/startup sector, which had started rebounding recently. This deal is a vote of confidence in e-commerce and allays fears and skepticism about sustenance and survival of the sector. The American giant Walmart, with huge experience in a first-world economy, will revolutionise Indian retail with low prices and a vast variety of consumer goods. Amazon's fight-back will ensure that prices remain competitive.

Fears

Online sellers on Flipkart are jittery because Walmart can wipe them off. Walmart, a \$500 billion American behemoth, has a reputation of killing small businesses with ultra-low prices. They fear that Walmart might bring in its own private labels via Flipkart to the Indian consumers, adding to competitive pressures.

These products would be brought in at hyper-competitive prices, which will cannibalise the market and make it difficult for other sellers to operate.

A week after global retail company Walmart approached the Competition Commission of India (CCI) for approval of its proposed acquisition in Flipkart, two top traders' bodies, including the Confederation of All India Traders (CAIT), have moved the fair-trade regulator against the deal. Flipkart had sealed a \$16-billion worth deal with US retail company Walmart this month. Traders across India are fearful that it would lead to a monopoly of few companies like Walmart due to huge cash reserves at their disposal. They called the deal a nightmare for domestic retail trade, which would create massive job loss.

Conclusion to MNCs

Probably the most serious concern is that small countries are at

a disadvantage in dealing with large multinationals. That giant firm may have annual revenue much larger than the small country's GNP.

The multinational may be the largest employer, landowner and taxpayer in a small country. That can threaten the sovereignty of the host (capital-importing) country in dealing with a firm that is larger and more powerful than the government. Despite these problems, there are genuine benefits that can be derived from having multinationals. They offer a way around trade barriers for a flow of resources and technology, which has been very beneficial to the world economy. In most cases, they promote the same free-trade goals of more output with less effort.

Sometimes about the deal

The Walmart- Flipkart deal is a signal of maturing online retail segment in India. The deal signifies the entry of giant U.S. retailer into an online market segment in India. This brings in line the other MNCs like Alibaba also to the Shores of Indian Online retail Market.

These are fear among brick-mortar shops and other affected people. The govt. is enthusiastic about the FDI flow and the tax authorities about the tax. The economy is surely to get a boost from the deal. But the ultimate winner of the deal is the final customer with more choices and competitive prices.

General Studies Paper- III

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

Topic: Effects of liberalization on the economy, changes in industrial policy and their effects on industrial growth.



2. 20 YEARS OF POKHRAN AND INDIA'S NUCLEAR AMBITIONS

Why in News?

India marked the 20th anniversary of the Pokhran nuclear tests, covering a journey from being a sanctions-hit country to getting a special waiver from the elite Nuclear Suppliers Group paving the way for signing civil nuclear deals with the United States (US) and several other countries.

Background

India had conducted five underground nuclear tests on May 11 and 13, 1998 in Pokhran in the Rajasthan desert at the end of which the central government, led by Prime Minister Atal Bihari Vajpayee, had declared India a nuclear state.

The five nuclear devices detonated during the Pokhran II test were Shakti I, II, III, IV and V. The second Pokhran Nuclear Test was conducted after Smiling Buddha (Pokhran-I) in 1974. May 11, the day of first of the five explosions during the Pokhran-II nuclear weapons testing, was officially declared as the National Technology Day. For Pokhran-II, a team of more than 100 scientists, technicians and soldiers under the leadership of former President Dr APJ Abdul Kalam, then the chief of the Defence Research and Development Organisation and Dr R Chidambaram, then the chairman of the Atomic Energy Commission, conducted five underground nuclear tests. Pakistan carried out nuclear tests a fortnight later.

Pokhran I vs Pokhran II

India had been grappling with a proximate nuclear challenge since October 1964 when China acquired its nuclear weapon capability and Beijing became the fifth member of the global nuclear club. Consequently India's strategic profile had to contend with this reality of a nuclear armed

neighbor with whom it had a very strained relationship post the October 1962 border war. India sought to redress this imbalance by carrying out a nuclear test (Pokhran I) in May 1974 but then PM Indira Gandhi refrained from weaponizing this capability – which at best was a technology demonstrator. This resulted in the USA imposing stringent technological sanctions against India and Delhi being ostracized by the larger US led western alliance.

Through the 1980's Pakistan pursued a covert nuclear weapon program, which was also enabled by China and this marked the beginning of Sino-Pak (Weapons of Mass Destruction) WMD cooperation that was unprecedented for its depth and opacity. Consequently by mid-1990 the Pakistan army had acquired a covert nuclear weapon and India's nuclear asymmetry and vulnerability became even more stark. This was exacerbated by the manner in which Pakistan used this nuclear capability as a shield to intensify its terror attacks against India, thereby patenting what has been described as nuclear weapon enabled terrorism (NWET). In December 1995 PM Narasimha Rao sought in vain to carry out a nuclear test and establish India as a de-facto (Nuclear Weapon State) NWS but this was foiled by the USA.

The Pokhran-II nuclear weapons tests, code-named 'Operation Shakti,' are considered different from the 1974 Pokhran-I exercise, code-named 'Smiling Buddha,' because back then India conducted one detonation that it designated a "peaceful nuclear explosion". Many experts believe that designating the exercise as a nuclear weapons test in 1974 would subject India to the kind of sanctions and embargoes it experienced after 1998 -

thus crippling its nuclear programme. This is why India did not declare itself a nuclear-weapons enabled country in 1974.

Sanctions

The tests shocked the world, particularly because they were done with utmost secrecy and the India-U.S. ties hit rock bottom. For nearly two months, the U.S. refused to have any dialogue with India and implemented the Glenn Amendment for the first time. Newer sanctions were imposed, and at one point it looked that relations would never recover. The US and several other countries imposed harsh sanctions against India, denying it critical nuclear and space technology. One of the fallouts of the sanctions was that the country's atomic reactors operated way below their capacity due to lack of fuel. The worst hits were the two boiling water reactors at Tarapur that required enriched uranium as fuel.

The talks between U.S. Deputy Secretary of State Strobe Talbott and Foreign Minister Jaswant Singh over the next two years were the most comprehensive dialogues India had with the U.S. on its nuclear policy, including the threat perception and future plans for security. India was anxious to have the sanctions lifted, but Mr. Singh sought to delink sanctions from the security dialogue, not to be pressurised to take quick decisions. Mr. Talbott began by insisting that the objective was to get India to sign the NPT. Then he listed five benchmarks as non-proliferation goals to normalise relations: signing the CTBT, halting production of fissile material, strategic restraint, strengthening export control regimes and normalisation of relations with Pakistan. These were strongly rejected by India, but the talks proceeded on the assumption that

India's security concerns should be fully understood and that India would take certain measures to suit its new status.

But, in effect, India met the U.S. demands more than half way, leading to an understanding, which led to President Bill Clinton's visit to India and Prime Minister Atal Bihari Vajpayee's visit to the U.S. in 2000. India refused to sign the CTBT, but declared a moratorium on testing; agreed to join the Fissile Material Cut-off Treaty negotiations without halting fissile material production; reaffirmed minimum deterrent without giving any number of warheads; and agreed to strengthen export controls. Additionally, India declared no-first-use and commitment to disarmament. Though no deal could be struck, the foundation was laid for what became the nuclear deal in 2008.

Criticism

As expressed by a military expert, "Credible minimum deterrence is when a minimum number of weapons are maintained that are adequate to cause unacceptable damage on an adversary who makes the first nuclear strike and the effectiveness of this principle is that capability to retaliate survives the first strike and that the retaliation itself is of an extent and magnitude that is unacceptable to the adversary," emphasising the need not to underestimate the ferocity of the first strike. This first strike could vastly debilitate not just people, but the economy, communications, military and public infrastructure and also harm the nuclear arsenal itself. It has been pointed out that "the number of warheads necessary to hold and deploy has to be proportionate to accuracy," emphasising that India would indeed need a very large force structure to ensure the required minimum deterrence. The costs of building up and maintaining a nuclear arsenal, even to the extent required

to adhere to its avowed principles, are very high, if not prohibitive. This will have an impact on the allocations to procure conventional weapons.

Dr K Santhanam, former DRDO scientist who was in charge of the test site preparations, spoke at an event at the Institute for Defence Studies and Analyses in Delhi, commemorating 20 years of Pokhran II. He disagreed with the belief that Pokhran II was a complete success and stated that the thermonuclear part of the test needed further scientific validation and physical tests to ensure a credible minimum deterrence. He added that scientific perspective could only be created if India went in for other tests. Experts are of the view that "If India were to do those tests, it will have to pay a cost in terms of its international standing. Therefore, the decision to carry out any further testing to enhance the credibility of weapons has to be balanced with the pursuit of other elements of India's national interests." They see a continuity in the Draft Nuclear Doctrine that was produced by the National Security Advisory Board in August 1999 but says there haven't been any substantial shifts.

There is a cross-party acceptability of the doctrine and a general agreement on the basic tenets of the doctrine. However, there is no specific number of nuclear assets which can quantify a perpetual state of credible deterrence. "If I say 100 devices are accurate today, that number can become larger or smaller depending on India's threat perception. Therefore, while this number represents credibility, it is not a number which will remain fixed. So, it is not a limitation of the doctrine but a characteristic of the same.

The factor that comes in is that India voluntarily accepted a nuclear moratorium that gave it benefits at the cost of not being able to further enhance the technological capacity through physical testing of nuclear

devices now limited to experimental or lab-based analysis. The scientific community within the government and top policy makers felt that the nuclear tests and the scientific simulations thereafter were adequate to address India's requirements of a credible minimum deterrence.

Bharat Karnad, member of the nuclear doctrine-drafting group in the First National Security Advisory Board, said that in terms of evolution of weapons themselves and the operational aspects of deterrence, no development has happened. "You can revise your doctrine but if you don't have the hard power for your weapons, you're not a thermal nuclear power," he said. He also believes that the Indian government is still unsure about its non-proliferation thinking and describes the nuclear disarmed world as an impractical fantasy. "Pakistan is a very minor kind of nuisance when you have an actual military threat in China. Focus on the things that will end up blunting the Chinese military edge. A thermonuclear force costs a lot less than to secure a conventional military force," Karnad said in an advice to the government.

Current Scenario

After getting the NSG waiver, the US signed the historical nuclear cooperation agreement with India a decade later. The deal with the US not only paved the way for India to gain access to critical space and nuclear technologies, it made import of supercomputers and high-technology equipment easier. The International Atomic Energy Agency (IAEA) had approved a safeguards agreement with India on August 1, 2008, after which the US approached the 48-nation NSG to grant a waiver to commence civilian nuclear trade. The NSG waiver was granted to India on September 6 that year allowing it to access civilian nuclear technology and fuel from other countries.

Following the waiver, France was the first country to sign a civil nuclear cooperation agreement with India. India also reached civil nuclear cooperation accords with several other countries after that. India now has nuclear cooperation agreement with the UK, Russia, Australia, Japan, Canada, Argentina, South Korea, Kazakhstan, Namibia, Bangladesh, Sri Lanka and Vietnam. Since then, India has become a member of the Missile Technology Control Regime and the Wassenaar Arrangement. While India joined the MTCR in 2016, it entered the Wassenaar Arrangement on export controls for conventional arms and dual-use goods and technologies last year.

India, though not a signatory of the nuclear non-proliferation treaty, is and aspires to be viewed by the world as a responsible nuclear power. The two cardinal principles of its nuclear doctrine are 'no first use' and maintaining 'a credible minimum deterrence' to obviate any unbridled build-up of nuclear stockpiles. Its principles and more importantly, its adherence to them have enabled India to secure crucial international deals, including the Indo-US nuclear deal in 2008 with a Nuclear Supplier Group

(NSG) waiver, a nuclear cooperation agreement with Japan, a nation with a strong anti-nuclear stance. These principles and its responsible conduct are also the basis for India's case to join the NSG as a permanent member.

Way Forward

While India stands for universal nuclear disarmament, it also had to protect its national interests, keeping in view the nuclearised environment it was faced with. It is also pertinent that Pokhran II was an indigenous effort, thus asserting our right to take steps in keeping with our security requirements. "Post Pokhran II, India has been recognised as a responsible nuclear power, with a very transparent nuclear doctrine, whose cornerstone is that we will never use nuclear weapons against a non-nuclear state, nor be the first to use it. But if subjected to any use of N, B or C, India will respond with all the might at its disposal.

India's nuclear doctrine hasn't changed in the last two decades and some experts have raised issues vis-a-vis the no first use policy and also suggested a policy of flexible response. The status quo cannot be cast in stone, changes to our nuclear doctrine need great deliberation. It must be

remembered that nuclear weapons are meant for deterrence and not really for war fighting. The current doctrine and nuclear readiness of India is also focused on deterring any possible nuclear capable adversary.

There is need to revisit the term 'massive' in terms of the envisaged retaliation within the nuclear doctrine. It has a negative impact on the nuclear-conventional war interface. Instead, it is suggested that the term 'flexible retaliation doctrine' for better escalation control. The nuclear draft is open to revisions and as an expert on nuclear technology Dr G Balachandran puts it, "prior to the nuclear draft, India was neither here nor there. Today, even 20 years after Pokhran II, it has direction." Thus, there is broad consensus on India's nuclear doctrine. 20 years after the nuclear tests, the fundamental tenets of the doctrine are still applicable despite the evolving strategic environment.

General Studies Paper- III

Topic: Achievements of Indians in Science & Technology; indigenization of technology and developing new technology.



3. OVERCROWDING OF PRISONS: THE PROBLEM STILL PERSIST

Why in News?

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 Supreme Court pulled up state governments and Union territories over the condition of jails, saying prisoners "cannot be kept in jail like animals. It was informed that many of the over 1,300 prisons across the country were overcrowded,

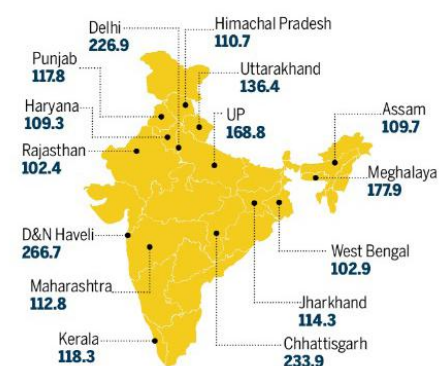
even to the extent of more than 600 per cent. The apex court had, through orders directed preparation of a plan of action by states and UTs to deal with the issue of overcrowding in prisons.

Background

According to the Prison Statistics India report by the National Crime Records Bureau (NCRB), India's prisons are overcrowded with an occupancy ratio of 14% more than the capacity. More than two-thirds of the inmates are under-trials. Chhattisgarh and Delhi

INDIAN PRISONS ARE SERIOUSLY OVERCROWDED

All figures in %



Source: Prison Statistics India

are among the top three in the list with an occupancy ratio of more than double the capacity. The prisons are overcrowded by 77.9% in Meghalaya, by 68.8% in Uttar Pradesh and by 39.8% in Madhya Pradesh. In absolute numbers, UP had the highest number of under-trials (62,669), followed by Bihar (23,424) and Maharashtra (21,667). In Bihar, 82% of prisoners were under-trials, the highest among states. More than 25% of under-trial prisoners in 16 out of 36 states and union territories have been detained for more than one year; Jammu and Kashmir tops this list with 54%, followed by Goa (50%) and Gujarat (42%). UP leads in terms of sheer numbers (18,214). With over a staggering 3.1 crore cases pending in various courts of the country, jails across the country will remain overcrowded in the absence of any effective systemic intervention. Nearly 43% of the under-trial population accounting for roughly 1.22 lakh under-trials remains detained for more than six months to more than five years. Many of them have spent more years in prison than the actual term they would have served had they been convicted.

As a matter of fundamental rights guaranteed by the Indian constitution, under-trials are presumed innocent till proven guilty. But they are often subjected to psychological and physical torture during detention and exposed to subhuman living conditions and prison violence. Many lose their family neighbourhood and community ties and, more often than not, their livelihoods. Moreover, prison time attaches social stigma to them as individuals and as community members. Even their families, relatives and communities are not immune to disgrace and humiliation. Even after their acquittal, under-trials find their employability severely jeopardised for none of their faults.

Causes of Overcrowding

The overcrowding in the prisons can partly be attributed to delay in the disposal of under-trial cases in the courts and partly to inadequate capacity of prisons in India to accommodate all the persons required to be sent to prisons with prisoners mostly belong to the weaker section of society. According to NCRB records, out of these 2.82 lakh under-trial inmates, over 55% are Muslims, Dalits and tribals. Collectively, these three communities form a population of 39% with a share of 14.2%, 16.6% and 8.6% of population respectively according to 2011 census. But the proportion of prisoners, both convicted and under-trials, from these communities is larger than their share in the country's population. As far as conviction is concerned, they seem to get convicted faster than the rest as they account for 50.4% of all convicts. Among Muslims, the community's share of convicts is 15.8%, slightly above their representation in population, but their share among under-trials (20.9%) is far higher. Among all convicts, scheduled castes and scheduled tribes have a population of 20.9% and 13.7% respectively, which is fairly higher.

Further the policy of granting probation, parole, remission and commutation of sentence has not been implemented in letter and spirit. The National Human Rights Commission of India has observed many discrepancies and shortcomings in the process of pre-mature release of convicted prisoner's remissions. The Commission has observed that "several instances have come to the notice of the Commission where certain inmates were not released nor their cases considered even after they had undergone the imprisonment for over 20 years". Section 360 of the Cr.P.C 1973 deals with the powers of the court to release certain convicted offenders on probation of good conduct instead of sentencing them to imprisonment. However, this facility is not extended uniformly and impartially.

Remission is a concession which can be granted to prisoners by the state government or by the head of the prison department and Superintendent of Prisons. Remission is intended to be an incentive for good behaviour and work. The relevant provisions in regard to the suspension and remission of sentence are contained in Section 432 of the Code of Criminal Procedure. The provisions of remissions are also arbitrary in nature and do not serve any purpose in the absence of uniform procedure throughout the country. There are very few cases in which the accused are released on parole after conviction as per the Probation of the Offender's Act. Premature release has become highly politicized and this privilege is given mainly to influential persons.

Under-trials often remain behind bars for years despite the provisions of Section 436A of the Code of Criminal Procedure, which came into effect in 2005. This section mandates the release, on personal bond with or without surety, of under-trial detainees who have been imprisoned for half the maximum sentence they would have received if convicted for the offence they are charged with. This section does not apply to those who could be sentenced to death or life term. There is severe staff crunch with 33% of the total requirement of prison officials still lies vacant, almost 36% of vacancy for supervising officers is still unfulfilled.

Consequences of Overcrowding

- Overcrowding adversely affects the health and hygiene of the prisoners.
- Prisoners do not get adequate space in the sleeping barrack as required for a normal human being.
- Overcrowding badly affects the quality of food being provided to the prisoners.

- It hampers reformation process and prison officers find it difficult to manage the daily affairs of the jails.
- It leads to further criminalisation and dominance of hardened criminals.
- It poses serious threat to surveillance and security of the prisons leading to riots and indiscipline.
- Due to overcrowding especially because of increasing number of under-trials, it is difficult to arrange adequate escort for production in the courts.
- Overcrowding leads to adverse inmate-official ratio.

International Obligations and Guidelines

- The International Covenant on Civil and Political Rights (ICCPR) remains the core international treaty on the protection of the rights of prisoners. India ratified the Covenant in 1979 and is bound to incorporate its provisions into domestic law and state practice.
- The International Covenant on Economic, Social and Cultural Rights (ICESR) states that prisoners have a right to the highest attainable standard of physical and mental health. Apart from civil and political rights, the so called second generation economic and social human rights as set down in the ICESR also apply to the prisoners.
- The UN standard Minimum Rule also made it mandatory to provide a separate residence for young and child prisoners from the adult prisoners. Subsequent UN directives have been the Basic Principles for the Treatment of Prisoners (United Nations 1990) and the Body of Principles for the Protection of All Persons under Any Form of Detention or Imprisonment (United Nations 1988).

Prison Reforms in India

The All India Jails Manual Committee 1957-59 was appointed by the government to prepare a model prison manual. The committee was asked to examine the problems of prison administration and to make suggestions for improvements to be adopted uniformly throughout the India. The report was presented in 1960. They not only enunciated principles for an efficient management of prisons, but also lay down scientific guidelines for corrective treatment of prisoners.

The Law Commission in its 78th Report (1979) made some recommendations for easing congestion in prisons. These suggestions include liberalisation of conditions of release on bail, particularly release of certain categories of under-trials on bail. Other methods of reducing overcrowding in prisons may include extensive use of fine as an alternative punishment for imprisonment, civil commitment and release on probation.

All India Committee (Mulla Committee) on Jail Reforms 1980-83 was constituted by the government of India under the chairmanship of Justice Anand Narain Mulla. The committee recommended:

- Setting up of a National Prison Commission as a continuing body to bring about modernisation of prisons in India.
- Total ban on the heinous practice of clubbing together juvenile offenders with hardened criminals in prisons.
- To constitute an All India Service called the Indian Prisons and Correctional Service for the recruitment of Prison Officials.
- After-care, rehabilitation and probation should constitute an integral part of prison service.
- The conditions of prison should be improved by making adequate arrangements for food, clothing, sanitation and ventilation.

- The prison staff should be properly trained and organised into different cadres.
- The media and public men should be allowed to visit prison so that they may have first-hand information about the conditions inside prison and be willing to co-operate with prison officials in rehabilitation work.
- Lodging of under-trial in jails should be reduced to bare minimum and they should be kept separate from the convicted prisoners.
- The government should make an endeavour to provide adequate resources and funds for prison reforms.

In the year 1986, a Juvenile Justice Act was enacted and observation homes, special homes and juvenile homes were constituted, where the neglected children and juvenile delinquent can be admitted and the juvenile delinquent cannot be tried with the non-juvenile delinquent offenders and cannot be kept within the prison. Many provisions were made regarding the orders that could be passed against the juvenile offenders and what cannot be passed against the juvenile offenders. Under this Act juvenile means a boy below the age of 16 years and a girl below the age of 18 years.

In 1987, the government of India appointed the Justice Krishna Iyer Committee to undertake a study on the situation of women prisoners in India. It has recommended induction of more women in the police force in view of their special role in tackling women and child offenders.

Following the Supreme Court direction (1996) in Ramamurthy vs State of Karnataka to bring about the uniformity nationally of prison laws and prepare a draft model prison manual, a committee was set up in the Bureau of Police Research and Development (BPR&D).

In 1999, a draft Model Prisons Management Bill (The Prison

Administration and Treatment of Prisoners Bill- 1998) was circulated to replace the Prison Act 1894 by the government of India to the respective states.

Government Measures

The government of India has taken various administrative and legislative measures for reducing overcrowding in prisons. Some of the initiatives taken are:

- (i) Establishment of Fast Track Courts (FTCs).
- (ii) Creation of additional capacity of prisons through the scheme of Modernization of Prisons.
- (iii) Launch of National Mission for Justice Delivery and Legal Reforms.
- (iv) Introduction of the concept of plea bargaining through Section 265 of Cr. PC and insertion of a new Section viz. 436-A in Cr. PC on the maximum period for which an under trial prisoner can be detained are some of the special initiatives taken by the government

of India to reduce overcrowding in jails.

- (v) The Model Prison Manual-2016 has a dedicated chapter on 'Undertrial Prisoners', which provides guidance on the facilities to be provided to undertrials viz. legal defence, interview with lawyers, signing of Vakalatnama, application to Courts for legal aid at government cost etc. These measures are also focused at reducing overcrowding in prisons.
- (vi) The National Legal Services Authority (NALSA) has also been providing free legal services to all under trial prisoners through its legal service clinics running in jails all over India. NALSA is also promoting plea bargaining for quick disposal of cases falling within the parameters spelt out in the provisions of plea bargaining given in Code of Criminal Procedure.

Way Forward

The Under Trial Review Committees (UTRCs) should be strengthened. The

committee, set up in every district, deliberates and recommends the release of under-trial prisoners and convicts who have undergone their sentences or are entitled to be released from jail on bail or remission granted to them.

Semi-open prisons or open prisons should be encouraged. It allows 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. The government needs to build more prisons and employ more staff to make their functioning more transparent and humane.

General Studies Paper- II

Topic: Issues relating to development and management of Social Sector/ Services relating to Health, Education, Human Resources.



4. NEW DAWN IN INDIAN RAILWAYS

Context

Indian Railways (IR) is the transport of masses. They had been the beasts of burden and have been catering to the passenger and cargo needs of the citizens of India. It is also the biggest employer in the country. With the rising population and more competitive mass transport facilities coming up, railways has to revamp its working to better serve the changing needs of the passengers and other cargo services. There have been major improvements in railways and many new initiatives undertaken for being user friendly and improvement in its efficiency.

Upgrading the Transporter

Indian Railways is one of the largest railway networks in the world. Due

to its sheer size, it is a big challenge to run it smoothly. The Indian government is undertaking several initiatives as to upgrade its aged railway infrastructure and enhance its quality of service. The Railway Ministry has announced plans to invest Rupees 905,000 crore (US\$139 billion) to upgrade the railways by 2020. IR's Research Design and Standards Organisation (RDSO) undertakes all research, designs and standardisation work for modernisation. There were many committees setup to revamp and upgrade Indian Railways, here the two most important are listed:

Bibek Debroy Committee

The Bibek Debroy Committee is a high level committee for "Mobilization of

Resources for Major Railway Projects and Restructuring of Railway Ministry and Railway Board".

Its major recommendations are:

- Establishment of independent regulator RRAI (Railway Regulatory Authority of India).
- Transition to commercial accounting.
- Streamline recruitment & HR processes.
- Focus on core areas.
- To ensure proper decentralisation down to the level of Divisional Railway Manager.
- All the production units should be placed under a government SPV known as the Indian Railway Manufacturing Company.

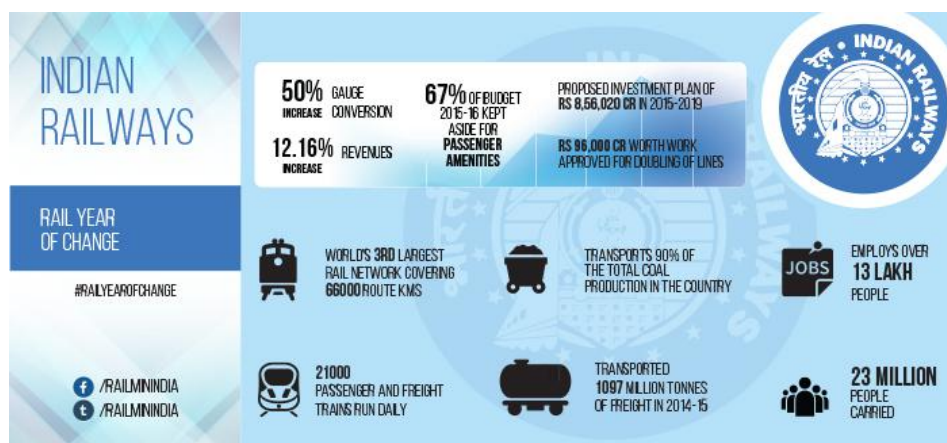
- Encouraging private entry in various railway infrastructure services & non-core activities.
- Joint Venture with state governments.
- Changing relationship between government & railways.
- Raising resources for investments.

Anil Kakodkar Committee

The Ministry of Railways had appointed a High Level Safety Review Committee under the chairmanship of Dr. Anil Kakodkar to review the safety of the Indian Railways and recommend improvements.

Its major recommendations were:

- The Committee notes that the 'present environment on Indian Railways reveals a grim picture of inadequate performance' largely due to poor infrastructure and resources and lack of empowerment at the functional level.
- The financial state of Indian Railways is at the brink of collapse' unless some concrete measures are taken. All safety margins have been squeezed. This has led to a neglect of infrastructure maintenance.
- In the present situation, the three vital functions (rule making, operations and the regulation) are all vested in the Railway Board. There is need for an independent mechanism for safety regulation.
- The Committee recommends restructuring of Research Design and Standards Organization (RDSO) for greater empowerment. It also recommends that a Railway Research and Development Council (RRDC) be set up directly under the government.
- The Committee recommends the adoption of an Advanced Signalling System (akin to the European Train Control System) for the entire trunk route length of 19,000 km within 5 years.



- All Level Crossings (both manned and unmanned) should be eliminated over five years.
- The Committee also recommends a switch over from the Integral Coach Factory (ICF) design coaches to the much safer Linke-Hofmann Busch (LHB) design coaches.
- Other recommendations are on the maintenance of safety related infrastructure.

Recent Initiatives

FDI policy in Indian Railways

100 % FDI is permitted through automatic route for construction, operation and maintenance railway infrastructure since November 2014.

Some of the key areas open for investments are:

- Suburban corridor projects through PPP.
- High speed train projects.
- Dedicated freight lines.
- Rolling stock including train sets, and locomotives/coaches manufacturing and maintenance facilities.
- Railway electrification.
- Signaling systems.
- Freight terminals.
- Passenger terminals.
- Infrastructure in industrial park pertaining to railway line/sidings including electrified railway lines and connectivity to main railway line.
- Mass Rapid Transport Systems.

Safety

- A special safety drive regarding – "Working on running lines" and "Safety at work sites" for a period of fifteen days to check incidences of uncoupling in passenger train (locomotive getting separated from formation).
- **Target of eliminating all unmanned level crossing preponed to 2018.** Till the time this is achieved, in the interim period, Indian Railways decided to deploy 'Gate Mitras'. Gate Mitra is an initiative where a person will be deployed at a Unmanned Line Crossing (UMLC) and would alert road users about approaching trains. All UMLCs on broad gauge as on November 2017 were provided with Gate Mitras. Gate Mitras were deployed at all unmanned level crossings (UMLCs) on broad gauge instead of only identified UMLCs in order to enhance safety.
- Initiated programme for 100% LED lighting at stations leading to improved illumination and passenger safety.
- Self-Propelled Ultrasonic Rail Testing (SPURTZ Car) is under procurement and trial of Ultrasonic Broken Rail Detection System is underway. Train Protection and Warning System (TPWS) is under implementation on suburban/high-density routes.
- Decided to switch over to 100 % manufacture of Linke Hofmann

Busch (LHB) coaches as these have numerous advantages over ICF coaches including higher speed and safety especially during derailment and collisions. Completely switch over to LHB coaches production from 2018-19.

Innovation Challenge

An innovation challenge has been conducted to invite ideas and to augment the pace of Indian Railways operational improvements through innovative methods. Innovation challenges attracted a huge response and a total of 4683 entries were received. RDSO has been entrusted the task of conducting the screening and evaluation process. The innovation challenge has been conducted in the following 6 areas:

- i Accessibility to trains from low level platforms.
- ii Increasing capacity of coaches.
- iii Digital capabilities at stations.
- iv Design of wagons for efficient loading and transportation of new commodities.
- v New idea/suggestion to improve the working of Indian Railways.
- vi Increasing non-fare revenue of Indian Railways.

New Trains

- India's first Tejas Express between Mumbai and Karmali inaugurated.
- More than three decade old demand for an "Express" train for people of Kirandul in Dantewada district of Chhattisgarh fulfilled.
- Prime Minister of India & Prime Minister of Bangladesh Jointly along with Chief Minister, West Bengal flagged off new cross-border train between India & Bangladesh, "Kolkata-Khulna Bandhan Express" from Kolkata.
- Introduced first AC EMU consisting of 12-car (12 coaches) fitted with indigenous 3-phase propulsion system of BHEL on Mumbai suburban section.

- Vistadome tourist coach with glass walls launched at Vishakhapatnam to run between Visakhapatnam and Araku Valley. The Vistadome coach has features like glass roof, LED lights, rotatable seats, GPS based info system etc will offer to tourists to enjoy scenic beauty not only at destination but also along the journey.
- Talgo: A step towards bullet train dreams: The Indian Railways introduced Spanish Talgo, a light train consuming 30 per cent less energy. The train consists of two executive class cars, four chair cars, a cafeteria, a power car and a tail-end coach for staff and equipment.
- Gatiman Express: Heralding a new era of semi-high speed trains in the country, the first Gatiman Express covered the 200 km distance between Delhi and Agra in 100 minutes. Equipped with a 5,500 HP electric locomotive, two executive AC chair cars and eight AC chair car coaches, the train has a high-power emergency braking system, automatic fire alarm, GPS-based passenger information system and sliding doors in the coaches.

Freight

- Double stack dwarf container introduced as a new delivery model to increase loadability and attract new traffic under wire.
- Mission Hundred – Commissioning of PFTs/Sidings- 45 terminals have been commissioned during 2016-17.

Human Resource

- **Project Saksham:** The decision of imparting a week-long training in skills and domain knowledge to all the employees of Indian Railways had been taken. The focus of all such training is to 'make a difference' to the job performance.
- NIVARAN portal for grievance redressal of railway employees was launched.

Deen Dayalu Coaches

To improve quality of travelling in general class, railways rolled out its first modern unreserved coach 'Deen Dayalu' with facilities like potable drinking water, mobile charging points and bio-toilets among others to be used in mail and express trains.

Besides the water filtration system to provide potable water, the coach is equipped with provision of cushioned luggage racks, additional hand hold in doorway area and coat hooks.

CNG Train

In a milestone in adoption of green fuel in Indian Railways, the first CNG train was launched on the Rewari-Rohtak section of Northern zone. Introduction of CNG train will reduce greenhouse gas emission by the railways and also the consumption of diesel. Railways have modified the 1,400 HP engine to run on dual fuel - diesel and CNG - through fumigation technology.

Executive Lounges

IRCTC and SSP Catering India have collaborated to set up a five star waiting lounge for the passengers at New Delhi. To offer home like comfort and hotel like luxuries at a reasonable price, IRCTC's executive lounge has tied-up with Leela Palace and other hotels and travel booking sites.

Privatisation of Catering in Trains

Poor quality food has been a bane for those travelling on trains in India. However, things are changing for good. Startups like Travel Khana is striving to ensure that train passengers get to eat the food of their liking and from restaurants of their choosing.

Also, train passengers will soon be able to order burgers and pizzas of their choice on the Indian Railways website and have them delivered right to their coaches.

Bio Toilets

Stepping up efforts to make environment better, the railways has set a target to install bio-toilets in all coaches to ensure the entire rail network as zero discharge zone by 2019.

Bio-Diesel

Railways has also set a target of increasing the use of bio-diesel upto 5 per cent of its total diesel consumption and also to focus on clean fuel like solar and wind energy to reduce emission in a significant way.

High Speed Rail Project

India and Japan are collaborating on the Mumbai– Ahmedabad High Speed Rail Project using Shinkansen technology covering a total of 508 km. A new entity named National High Speed Rail Corporation Ltd was set up in February 2016 to implement the project.

Customer Initiatives

- Nomination of **‘Key Customer Managers’** with an aim to provide an appropriate mechanism to the major freight customers/ stakeholders to redress their day-to-day problems/ grievance.
- A process of structured dialogue called **“SAMVAD”** between customers and top railway authorities has been initiated under which continuous feedback from customers will be sought. The “SAMVAD” at all India level will be quarterly. At Zonal level, it will be bi-monthly.
- **Project Swarn-** 14 Rajdhani and 15 Shatabdi trains were identified to significantly improve passengers experience under “Project Swarn”. To achieve the objectives under this project, ‘staff behaviour’

was identified as an important parameter. The frontline staff of these premier trains was trained in various aspects such as catering, linen management and cleanliness.

- A new Integrated Mobile App **‘Rail SAARTHI’** launched which provides various services viz. Rail e-ticket booking, unreserved ticketing, complaint management, Clean my Coach, passenger enquiry etc.

High Speed Railway/ Mobility

- A road map developed to increase speed of trains by overcoming the existing impediments on principal routes of the railways on Golden Quadrilateral(GQ) along with diagonals (Delhi – Mumbai, Delhi – Howrah, Howrah- Chennai, Chennai – Mumbai, Delhi – Chennai and Howrah – Mumbai) due to fixed infrastructure, movable infrastructure and operational practices.
- Projects for two routes viz. New Delhi- Mumbai Central (including Vadodara- Ahmedabad) and New Delhi- Howrah (including Kanpur- Lucknow) for raising of speed to 160/200kmph have been included in WP 2017-18 at Rs. 18,000 crores approximately. Speed Enhancement project entails works such as through fencing, removal of level crossings, train protection warning system (TPWS), mobile train radio communication (MTRC), automated and mechanized diagnostic systems etc. which will considerably enhance safety and reliability. The main outcome of the implementation of the projects is increase in the maximum speed of the trains to 160/200 kmph. This will reduce the travel time of premium Rajdhani type trains to 12 hours as against the present

travel time of 17 hours for Howrah Rajdhani and 15 hours 35 minutes for Mumbai Rajdhani.

- Replacement of loco hauled commuter trains with MEMU/ DEMU trains: MEMU trains have a potential for average speed increment of up to 20kmph in comparison to loco driven passenger trains.

Conclusion

Being the largest enterprise in the nation and having pressure of ever increasing population, Indian Railways has been on a constant paddle for improvement and upgradation. With the 21st century, the focus is not just on transporting man and material from point A to point B, but on customer satisfaction, energy efficiency, connectivity, harnessing information and communication technology (ICT) to streamline its processes and procedures. Additionally to upgrade its administrative machinery and capacity, so as to meet the challenges that come forth with the changing demands of the nation and its developmental needs. Indian Railways has always been the focus and driver of growth since independence. The inclusion of Railways Budget into general budget has also linked it better with the national financial planning activity where the transfer and balancing of funds can happen smoothly. Thereby we see that it's not just at constitutional level but on various fronts, that the railways are embarking upon the journey to improvement and coming in new avatar in the changing times.

General Studies Paper- III

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

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5. UNDERSTANDING THE DARKNET

Why in News?

Recently, four Germans were arrested for posting and sharing child pornography; a website called “SilkRoad” was banned for selling illegal items and a 16-year-old girl radicalised herself in just seven months using content she found on the darknet. This culminated in her attempting to fly to Syria to join Islamic State, something she was only prevented from doing at the last minute by counter terrorism agencies.

The dark net has continued to make headlines over the last decade as a mysterious part of the internet where criminals lurk and engage in illegal activities, all from the privacy of home computers. Stories of the infamous Silk Road or AlphaBay markets, where users can order illicit drugs online, may come to mind. Or perhaps you have heard about the anonymous digital currency, Bitcoin. So Darknet is something which cannot be ignored, rather it must be known by all the Netizens for their safety and awareness.

Understanding “Darknet”

A hidden internet exists underneath the 'surface web,' hidden from the view of ordinary web users. The darknet refers to networks that are not indexed by search engines such as Google, Yahoo or Bing. These are networks that are only available to a select group of people and not to the general internet public and only accessible via authorization, specific software and configurations. This includes harmless places such as academic databases and corporate sites, as well as those with shadier subjects such as black markets, fetish communities and hacking and piracy. A darknet is a routed allocation of IP address space that is not discoverable by any usual means. The term is used to refer to both a single

private network and the collective portion of internet address space that has been configured in that manner.

Technically, a darknet is a variation on a virtual private network (VPN) with additional measures in place to ensure that the network and IP addresses of members are not discoverable. The purpose is to hide not only the communications themselves but the fact that information is being exchanged. Members join with the expectation of being able to share information and/or files with little risk of detection. Popular darknets include Tor (the onion router), Freenet and I2P. Such networks are typically decentralized, routing traffic through a wide-spread system of servers, which are often provided by volunteers. The complex routing system makes it difficult to trace communications.

The term was originally coined in the 1970s to refer to computer networks that were isolated from the ARPANET for obvious security reasons. These darknets were able to receive communication from the ARPANET but were inaccessible and invisible in network lists and would disregard pings and other regular inquiries.

Use and Misuse of Darknet

Users of this darknet are truly anonymous and it is this anonymity that attracted the criminal element to it. Here they are free to conduct their business and express themselves without fear of repercussion. It has become a haven for criminals selling drugs and guns, human trafficking and scamming.

Perhaps unsurprisingly, the network architecture of the darknet was originally developed by the military—the US Navy to be precise. Military, government and law enforcement organisations are still

amongst the main users of the hidden internet. This is because ordinary internet browsing can reveal your location and even if the content of your communications is well-encrypted, people can still easily see who is talking to whom and potentially where they are located. For soldiers and agents in the field, politicians conducting secret negotiations and in many other circumstances, this presents an unacceptable security risk.

The darknet is also popular amongst journalists and political bloggers, especially those living in countries where censorship and political imprisonment are common place.

Darknets are also used in network security testing. The administrator sets aside a portion of unused IP address space for the darknet and configures a network-monitoring device to detect any traffic headed to an IP address within that range. Because no legitimate systems run on the darknet, any traffic for an address within it is from a malicious or misconfigured system. Darknets are especially useful for detecting systems that are infected by worms or other malicious programs that are attempting to spread on the network.

Special-purpose darknets are most commonly used for illegal file sharing, which includes copyrighted media, pirated software, malware programs and illicit content, such as child pornography. Another purpose of darknets is to provide a venue for private communication when public communication is undesirable, dangerous or not permitted. For example, when the Mubarak regime in Egypt shut down the internet in that country, political dissidents used the Tor darknet to maintain communications with the rest of the world.

Instant messaging program Wickr — the same Wickr that Australian politicians use to talk to each other — is another common tool used in association with the dark net. While Tor is the most famous browser, it is also just one of many dark net tools available.

Virtual Private Network (VPN)

When you establish an internet connection at home, at a coffee shop, or while travelling, you're connected to a public or shared network through an internet service provider (ISP).

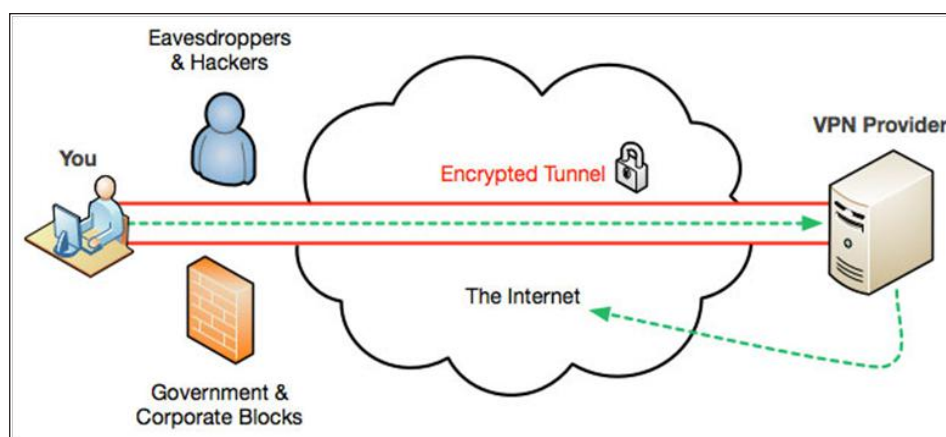
This means that any information you send through the public network is just that: public. Since an ISP can see what information you're accessing, they can control the content you have access to by blocking and censoring websites.

Virtually anyone with the tools and know-how, including governments and businesses, can see what you're doing, track when you do it and where you do it from.

What's worse is hackers and cybercriminals can steal your personal information - such as credit cards, bank account numbers, passwords and other personal data you don't want out in the open — to commit fraud.

A VPN (Virtual Private Network) is a service that creates a private, secure network over a public one. Once you connect through a VPN, all your traffic becomes encrypted and your IP (Internet Protocol) address gets replaced with the address of the VPN server. Basically, nobody will manage to track your online traffic. As a result, your personal information and online activities remain private and secure. Plus, using a VPN also means that:

- You can overcome geo-restrictions.
- You can enjoy true online anonymity.
- You can freely speak your mind online.



Many security protocols have been developed as VPNs, each offering differing levels of security and features. Among the more common are:

IP security (IPSec): IPSec is often used to secure internet communications and can operate in two modes. Transport mode only encrypts the data packet message itself while tunneling mode encrypts the entire data packet.

Layer 2 Tunneling Protocol (L2TP)/IPsec: The L2TP and IPsec protocols combine their best individual features to create a highly secure VPN client. Since L2TP isn't capable of encryption, it instead generates the tunnel while the IPsec protocol handles encryption, channel security and data integrity checks to ensure all of the packets have arrived and that the channel has not been compromised.

Secure Sockets Layer (SSL) and Transport Layer Security (TLS): SSL and TLS are used extensively in the security of online retailers and service providers. These protocols operate using a handshake method. As security experts put it, "A HTTP-based SSL connection is always initiated by the client using a URL starting with https:// instead of with http://. At the beginning of an SSL session, an SSL handshake is performed. This handshake produces the cryptographic parameters of the session."

Point-to-Point Tunneling Protocol (PPTP): PPTP is a ubiquitous VPN protocol used since the mid 1990s and

can be installed on a huge variety of operating systems has been around since the days of Windows 95. But, like L2TP, PPTP doesn't do encryption, it simply tunnels and encapsulates the data packet.

Secure Shell (SSH): SSH creates both the VPN tunnel and the encryption that protects it. This allows users to transfer information unsecured data by routing the traffic from remote filesystems through an encrypted channel. The data itself isn't encrypted but the channel its moving through is.

Despite all precautions, a darknet can never be completely undetectable. In October 2011, the hacktivist group Anonymous penetrated the Tor darknet to take down a website hosting service called Freedom Hosting, which was home to over forty child pornography sites.

Darknet or Deepweb?

Most people are confused about what exactly the darknet is. Firstly, it is sometimes confused with the deep web, a term that refers to all parts of the internet which cannot be indexed by search engines and so can't be found through Google, Bing, Yahoo, and so forth. Experts believe that the deep web is hundreds of times larger than the surface web (i.e., the internet you get to via browsers and search engines).

In fact, most of the deep web contains nothing sinister whatsoever. It includes large databases, libraries

and members-only websites that are not available to the general public. Mostly, it is composed of academic resources maintained by universities. If you've ever used the computer catalog at a public library, you've scratched its surface. It uses alternative search engines for access though. Being unindexed, it cannot be comprehensively searched in its entirety and many deep web index projects fail and disappear. Some of its search engines include Ahmia.fi, Deep Web Technologies, Tor Search and Freenet.

The dark web (or dark net) is a small part of the deep web. Its contents are not accessible through search engines, but it's something more: it is the anonymous internet. Within the dark net, both web surfers and website publishers are entirely anonymous. Whilst large government agencies are

theoretically able to track some people within this anonymous space, it is very difficult, requires a huge amount of resources and isn't always successful.

Word of Caution

Anyone can access this hidden internet very easily, but if you decide to go exploring please be very careful. There is a lot of unsavoury content as well as a large number of criminals. Don't just click links without thinking about where you might end up, what you might see, or whom you might meet. Every Netizen is strictly responsible for the sites he/she access and the choices being made and the consequences to follow later.



Conclusion

The dark net is not necessarily a place but more a way of using the internet that can be used for good or bad.

It is only because media headlines referencing the dark net usually involve drugs or illegal activity that the use of the word "dark" usually gets conflated with sinister, when it more appropriately just means hidden or difficult to follow.

In coming years, governments will be tasked with drafting and implementing more nuanced cyber laws that detail what kind of encryption and privacy tools can be used, by whom and for what purposes. With the rise of computers and digital networking over the past four decades, governments have had to draft cyber laws and the same will apply to dark net technology.

But as the world becomes increasingly digital, so will crime. The internet gave us Google, email and rich information, but it also gave us cyber-bullying, mass pornography and Ashley Madison. The dark net should be expected to present the same dichotomies, which in turn will pose its own set of social questions, including about how much we value our right to privacy, from the individual level to the organisational level.

Net neutrality, personal data protection and the portability of digital rights may be on governmental agendas, but there is one place where these matters were settled ages ago: the darknet. Free from any government-imposed rules, it offers relative anonymity and protection.

General Studies Paper- III

Topic: Science and Technology-developments and their applications and effects in everyday life.



6. MONUMENT MITRA: CARETAKER OR EXPLOITER

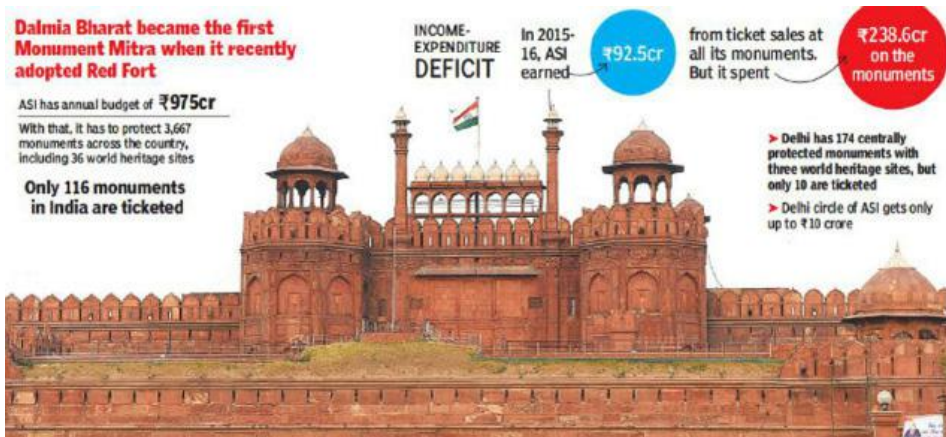
Why in News?

Recently Ministry of Culture had signed a Memorandum of Understanding with the Dalmia Bharat group for the restoration of Delhi's Red Fort under 'Adopt a Heritage' scheme. Other memorandums of understanding signed under the project are the Mount Stok Kangri trek route in Ladakh by

Adventure Tour Operators Association of India (ATOAI), Gangotri temple area and trail to Gaumukh, Uttarakhand by ATOAI and Gandikota Fort, Andhra Pradesh by Dalmia Bharat Limited.

The project kicked up a storm after reports that private entity Dalmia Bharat, under an MoU, would build infrastructure and maintain the

iconic Red Fort. Dalmia Bharat has committed 25 crore for the purpose. The Opposition termed it an attack on the idea of India, alleging that the government was handing over the symbol of India's independence to private parties. The government said the scheme would help to increase tourist footfall.



About Adopt a Heritage Scheme

The 'Adopt a Heritage: Apni Dharohar, Apni Pehchaan' scheme is an initiative of the Ministry of Tourism, in collaboration with the Ministry of Culture and the Archaeological Survey of India. It was launched in September 2017 on World Tourism Day by President Ram Nath Kovind. Under it, the government invites entities, including public sector companies, private sector firms as well as individuals, to develop selected monuments and heritage and tourist sites across India.

Development of these tourist sites calls for providing and maintaining basic amenities, including drinking water, ease of access for the differently abled and senior citizens, standardised signage, cleanliness, public conveniences and illumination, along with advanced amenities such as surveillance systems, night-viewing facilities and tourism facilitation centres. The sites/monument are selected on the basis of tourist footfall and visibility and can be adopted by private and public sector companies and individuals — known as Monument Mitras — for an initial period of five years. The Monument Mitras are selected by the 'oversight and vision committee,' co-chaired by the Tourism Secretary and the Culture Secretary, on the basis of the bidder's 'vision' for development of all amenities at the heritage site.

There is no financial bid involved. The corporate sector is expected to use corporate social responsibility (CSR) funds for the upkeep of the site. The Monument Mitras, in turn, will get limited visibility on the site premises and on the 'Incredible India' website.

The oversight committee also has the power to terminate a memorandum of understanding in case of non-compliance or non-performance.

Under the scheme, the government has put up a list of over 93 ASI monuments that can be bid for by private and public sector firms, as well as individuals. This is a pretty small list, as the ASI protects 3,686 ancient monuments and archaeological sites, including 36 world heritage sites. So far, 31 agencies or Monument Mitras have been approved to adopt 95 monuments/tourist sites. However, only four MoUs have been signed. These are between the Ministry of Tourism, the Adventure Tour Operators Association of India and the Government of Jammu & Kashmir for Mt. Stok Kangri, Ladakh; the Ministry of Tourism, the Adventure Tour Operators Association of India and the Uttarakhand government for trail to Gaumukh; the Ministry of Tourism, the Ministry of Culture, the ASI and Dalmia Bharat for the Red Fort (in Delhi) and the Gandikota Fort (in Andhra Pradesh).

But this isn't the first or only instance of adoption of an iconic monument under the "Adopt a

Heritage" scheme. Government-owned NBCC has adopted Purana Qila and SBI Foundation, the CSR arm of state-owned State Bank of India, the capital's Jantar Mantar. Yatra.com has Hampi, Qutub Minar and Ajanta and Ellora caves and GMR and ITC have submitted proposals for the Taj Mahal. Ninety-three Archaeological Survey of India-ticketed monuments are open for bidding; 30 companies have been selected to "adopt" some of these sites.

Certain Conditions

First, this is an experimental project and the management will be initially privatized for 5 years. Second, the companies will not own the monuments. The Dalmia Bharat cannot auction and sell the Red Fort. Third, the private companies will not be able to administer the heritage sites on their own; they will have to do this jointly with government institutions.

New Name, Old Scheme

Tracing the origins of the 'Adopt a Heritage' scheme, we show how this programme has its roots in previous government policies. Each passing government at the Centre changes the name and texture of this scheme, but its essence remains the same. Hence, the project is an old wine in a new bottle — a bottle which is now being bequeathed to the corporate sector.

In one such attempt, the government in 2011 formed a National Culture Fund. Since then, 34 projects have been completed under it through public-private partnerships. Another similar scheme under the UPA government was 'Campaign Clean India,' in which the government had identified 120 monuments/destinations. Under this scheme, the India Tourism Development Corporation had adopted Qutab Minar as a pilot project in 2012, while ONGC adopted six monuments — Ellora

Caves, Elephanta Caves, Golkonda Fort, Mamallapuram, Red Fort and Taj Mahal — as part of its CSR.

Making a Mitr

The process of monument adoption begins with the interested entity selecting any of the numerous featured heritage sites according to the guidelines. The monuments are separated into three categories - Green, Blue and Orange - depending on tourist footfall and visibility. Iconic sites like the Taj Mahal, Qutub Minar, Konark Temple and Red Fort, among others, are categorized as 'Green' while Purana Quila and Jantar Mantar fall in the 'Blue' category. The Sanchi Stupa and Tipu Palace are a few of the popular sites in the 'Orange' category. Entities are encouraged to adopt from the Blue and Orange category or a mix of the three - adoption of only 'Green' category monuments is not permitted. In the past seven months, Letters of Intent were handed over to 33 agencies for 98 monuments - including the Jantar Mantar, Konark Sun Temple and the Ajanta Caves - in four phases.

From a corporate's point of view, the benefits of this development are clear. A corporate house has much to gain by being able to leverage the fame and the legacy value of iconic structures and monuments. There are three obvious benefits to the brand or the corporate. Firstly, there's tremendous brand visibility as the footfalls and media coverage is guaranteed by the heritage sites itself. Secondly, the prestige that the association bestows on the brand can add much lustre to the brand's image. Third is the direct revenue earning potential from using the heritage site as a venue for hosting events.

What the country probably gains is better maintenance, upkeep and overall management of the national heritage. Under the contract, the Dalmia Bharat group will have to provide certain

basic amenities within six months. These include providing drinking water kiosks, street furniture-like benches and shop signage. Then there are tasks that have to be completed within a year. These include putting up tactile maps, upgrading toilets, lighting up the Red Fort pathways and bollards, restoration work and landscaping, building a 1,000-square-foot visitor facility centre, 3-D projection mapping of the Red Fort's interior and exterior, battery-operated vehicles and charging stations for such vehicles and a thematic cafeteria.

Tasks that need to be completed within two years include setting up exhibitions in cells under the Asad Burj, virtual reality-based monument interpretation, building night trails and structural illumination of the entire Red Fort. There are certain basic amenities that have to be provided within two years. These include installing turnstiles at check points, fencing with sliding doors and tactile paving.

International Experience

Corporates frequently sponsor the development and upkeep of sites across the world, especially in Europe. The Colosseum recently underwent restoration work sponsored by the Italian luxury label Tod's, while Fendi spent \$2.2 million on restoring Trevi Fountain. Tourist entry at Angkor Wat, Cambodia, is managed by the Sok Kong Import Export Company, which pays the government a fee. American Express says it has given nearly \$60 million since 1974 to preserve more than 500 iconic historic sites worldwide.

Criticism

The heritage of a country is national. It should be available to everybody and should not represent the agenda or interests of a private company. Moreover, the heritage sites are being partially maintained from taxpayers' money (but also by income from

tickets). If the government is unable to maintain the sites properly and gives this responsibility to a private company, is it fair the government is still taking the taxpayers' money?

Moreover, many of the sites advertised for adoption are religious or of religious importance. Pushing them further into the consumption-ruled private market is questionable when compared to the moral values claimed by these religions. The conclusion that Buddha focused so much on struggling with human desire and yet the Buddhist caves in Ajanta, a place when the pious had once lived a very modest life, will now be managed by a private company — which built its wealth on the consumers' desire — leaves one with an awkward feeling.

What is the Need for CSR Funds?

The purpose of 'Adopt a Heritage' scheme is to provide basic facilities to these heritage sites, which include cleanliness, convenience to the public and easy accessibility. What's interesting is that there exist a variety of schemes that cater to similar missions and visions that are financed using taxpayer money. With this in mind, an important question arises — Why is that we need to tap into CSR funds for this programme when ASI has the required capabilities for the restoration of Buddhist sites in Afghanistan, Laos, Cambodia and Myanmar?

CSR should rather focus on issues that impact the health of the nation and other key areas that aren't being effectively managed by the government. Hence, CSR should focus on rural healthcare delivery and sanitation in order to make sure that our demographic dividend doesn't crumble due to the multiplier effects of poor health.

ASI Needs Renovation

The Archaeological Survey of India (ASI), which is in the eye of the storm, is

attracting little attention. Nor is its role being augmented. Yet its functioning over 150 years and a redefinition of its role are at the core of the controversy. Granted an annual budget of nearly RS. 975 crore, the ASI under the Ancient Monuments and Archaeological Sites and Remains (AMASR) Act is directly responsible for “3,650 ancient monuments and archaeological sites and remains of national importance.”

Formed in 1861, the ASI has long been the beleaguered face of India’s architectural heritage and conservation. A plodding style of

functioning, inadequate signages, poor facilities, unimaginative displays and an enormous resource crunch have dogged its history. It has been unable to protect artefacts against thefts and smuggling, the defacing of monuments and encroachments or squatters.

Conclusion

What the country probably gains is better maintenance, upkeep and overall management of the national heritage. However, the move reflects the deficiencies of the ministry of culture and ASI, whose responsibility

it should be to ensure that these cultural treasures are well maintained. Or its marketing, which should be the responsibility of the ministry of tourism. It is a real pity that the government is incapable of performing these duties.

General Studies Paper- II

Topic: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

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7. BIOFUELS: AN ALTERNATIVE TO FUEL

Why in News?

The Union Cabinet has approved the 2018 National Policy on Biofuels. Reduced dependency of imports and environmental benefits are among the goals for the legislation. It assumes importance given that India is the world’s third largest oil importer, with oil imports increasing by over 25% in FY18 to \$109 billion from a year ago. Also, Prime Minister Modi had in March 2015 set a target of lowering import dependence in oil by 10 percentage points to 67% by 2022, when the country will celebrate 75 years of Independence. Till now only ethanol produced from sugarcane was allowed to be mixed in petrol.

Background

India initiated its biofuel programme more than a decade ago and launched several policy measures to promote biofuels since then. In 2002, India launched its “Ethanol Blending Programme” and mandated a 5% blending of ethanol (E5) with petrol in nine states and four Union Territories with effect from January 2003. The Planning Commission of India constituted a Committee

on Development of Biofuels in July 2002. The report of the Committee, recommended India to progressively move towards higher targets regarding blending of biofuels, including strengthening of the ethanol blending programme. However, the 5% blending mandate in the case of ethanol could not be met due to shortage of bioethanol supply.

The Planning Commission report of 2003 recommended launching of a National Mission on Biodiesel to be based on non-edible oil and identified Jatropha as the most suitable tree-borne oilseed for biodiesel production. One aim of the Mission was to gradually raise the blending target to 20% by the year 2012. The Planning Commission estimated that 11.2 million hectare of land would be required for Jatropha plantation to achieve the 20% target by 2012 and identified 13.4 million hectare of land that could be actually used for plantation. In October 2005 the Ministry of Petroleum and Natural Gas announced a biodiesel purchase policy, which required Oil Marketing Companies to procure biodiesel in the country for blending with diesel with effect from January 2006.

In September 2008, the Union Cabinet set a target of 5% blending across the country. Although the 5% target could not be realized, the government set a target of 10% blending in October 2008.

In order to promote biofuels in the country, a National Policy on Biofuels was made by Ministry of New and Renewable Energy during the year 2009. The goal of the policy was to ensure the ready availability of biofuels to meet demand and proposed an indicative target of 20% blending of biofuels, both for bio-diesel and bio-ethanol, by 2017. However, India has so far failed to achieve its target of up to 20 per cent ethanol blending with fossil fuels by 2017. Only 5 per cent ethanol blending in fuels is allowed so far and ethanol prices are fixed periodically by the government, using an economic formula considering cane production, sugar demand, ethanol demand and capacity.

Globally, biofuels have caught the attention in last decade and it is imperative to keep up with the pace of developments in the field of biofuels. Biofuels in India are of strategic importance as it augers well with the

ongoing initiatives of the government such as Make in India, Swachh Bharat Abhiyan, Skill Development and offers great opportunity to integrate with the ambitious targets of doubling of farmers income, import reduction, employment generation, waste to wealth creation. Biofuels programme in India has been largely impacted due to the sustained and quantum non-availability of domestic feedstock for biofuel production which needs to be addressed.

Biofuels in India

Biofuels are liquid or gaseous fuels primarily produced from biomass and can be used to replace or can be used in addition to diesel, petrol or other fossil fuels for transport, stationary, portable and other applications. Crops used to make biofuels are generally high in sugar (such as sugarcane, sugarbeet and sweet sorghum), starch (such as maize and tapioca) or oils (such as soybean, rapeseed and coconut, sunflower). There are four types of biofuels:

(i) First generation biofuels: First generation biofuels are made from biomass consisting of sugars, starch, vegetable oils, animal starch or biodegradable output wastes from agriculture, industry, forestry and households using conventional technologies. Bio-diesel and bio-ethanol comes under first generation bio-fuels.

(ii) Second generation biofuels: These are produced from non-food crops

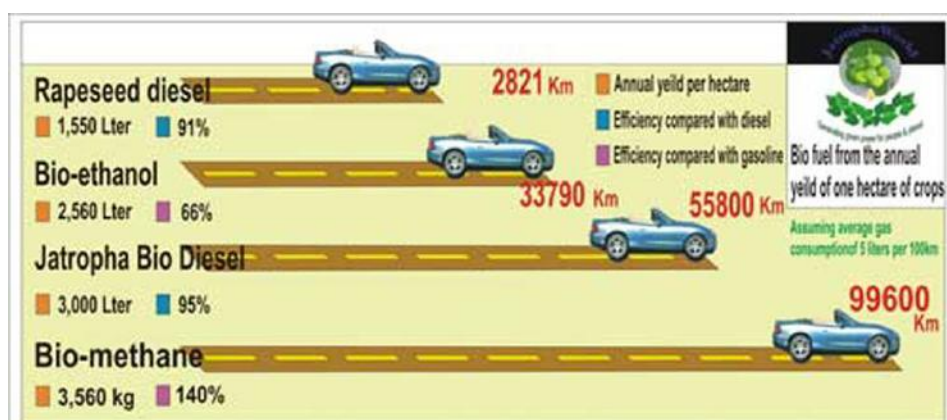
such as cellulosic biofuels and waste biomass (stalks of wheat and corn and wood). Examples include advanced biofuels like bio-hydrogen and bio-methanol. Second generation biofuel technologies are gaining importance because first generation biofuels manufacture has got major limitations. The primary one is that, they cannot be produced beyond a threshold level without threatening food security. They are also not cost competitive with existing fossil fuels. The second generation fuels are more sustainable, affordable and have greater environmental benefits. However, they have not become popular because the technology for producing these is not yet standardized. Further; Ligno-cellulosic materials can be converted to alcohol. Organic waste material converted into energy forms which can be used as an automotive fuel: waste oil (e g, cooking oil) into biodiesel; animal manure and organic household wastes into biogas; and special strains of algae, agricultural and forestry-waste products into ethanol. It also helps to diminish waste management problems.

(iii) Third and Fourth generation bio-fuels: The third generation biofuels include Algal biodiesel, Algal hydrogen and conversion of

biomass to hydrogen whereas the fourth generation biofuels include biofuels from high solar efficiency cultivations. However, these are still at a nascent stage.

National Policy on Biofuel 2018-Features

- The policy categorises biofuels as "Basic Biofuels" viz. First Generation (1G) bioethanol & biodiesel and "Advanced Biofuels" - Second Generation (2G) ethanol, Municipal Solid Waste (MSW) to drop-in fuels, Third Generation (3G) biofuels, bio-CNG etc. to enable extension of appropriate financial and fiscal incentives under each category.
- The policy expands the scope of raw material for ethanol production by allowing use of Sugarcane Juice, Sugar containing materials like Sugar Beet, Sweet Sorghum, Starch containing materials like corn, cassava, damaged food grains like wheat, broken rice, rotten potatoes, unfit for human consumption for ethanol production.
- Farmers are at a risk of not getting appropriate price for their produce during the surplus production phase. Taking this into account, the policy allows use of surplus food grains for production of ethanol for blending with petrol with the approval of National Biofuel Coordination Committee.
- With a thrust on Advanced Biofuels, the policy indicates a viability gap funding scheme for 2G ethanol Bio refineries of Rs.5000 crore in 6 years in addition to additional tax incentives, higher purchase price as compared to 1G biofuels.
- The policy encourages setting up of supply chain mechanisms for biodiesel production from non-edible oilseeds, used cooking oil, short gestation crops.



Benefits

- **Reduce Import Dependency:** One crore lit of E10 saves Rs.28 crore of forex at current rates. The ethanol supply year 2017-18 is likely to see a supply of around 150 crore litres of ethanol which will result in savings of over Rs.4000 crore of forex.
- **Cleaner Environment:** One crore lit of E-10 saves around 20,000 ton of CO₂ emissions. For the ethanol supply year 2017-18, there will be lesser emissions of CO₂ to the tune of 30 lakh ton. By reducing crop burning & conversion of agricultural residues/wastes to biofuels there will be further reduction in Green House Gas emissions.
- **Health Benefits:** Prolonged reuse of cooking oil for preparing food, particularly in deep-frying is a potential health hazard and can lead to many diseases. Used cooking oil is a potential feedstock for biodiesel and its use for making biodiesel will prevent diversion of used cooking oil in the food industry.
- **MSW Management:** It is estimated that, annually 62 MMT of Municipal Solid Waste (MSW) gets generated in India. There are technologies available which can convert waste/plastic, MSW to drop in fuels. One ton of such waste has the potential to provide around 20% of drop in fuels.
- **Infrastructural Investment in Rural Areas:** It is estimated that, one 100klpd bio refinery will require around Rs.800 crore capital investment. At present Oil Marketing Companies are in the process of setting up twelve 2G bio refineries with an investment of around Rs.10,000 crore. Further addition of 2G bio refineries across the country will spur infrastructural investment in the rural areas.

• Employment Generation:

One 100klpd 2G bio refinery can contribute 1200 jobs in plant operations, village level entrepreneurs and supply chain management.

• Additional Income to Farmers:

By adopting 2G technologies, agricultural residues/waste which otherwise are burnt by the farmers can be converted to ethanol and can fetch a price for these waste if a market is developed for the same. Also, farmers are at a risk of not getting appropriate price for their produce during the surplus production phase. Thus conversion of surplus grains and agricultural biomass can help in price stabilization.

Bio-Fuels and Energy security

In the context of shrinking crude oil reserves, rising demand and the resultant rise in prices of petroleum, as well as the concerns about global climate change and energy security, bioenergy is becoming increasingly relevant as a possible and potential alternative to fossil fuels. India has very low reserves of fossil fuels and has to import more than seventy five percent of its energy demand. India's emerging economy has a growing demand for energy. In 2040, India is expected to account for 15% of the world's oil demand. Facing the decline of global fossil fuel resources and the risk of climate change, the Indian government and energy industry are considering the long-term expansion of biofuel production in order to increase energy security. Biodiesel and bioethanol will play a prominent role to meet the growing fuel demands of the transport sector. While biodiesel has a wide range of applications for trucks, busses, agricultural machinery or for water pumps, ethanol is mainly used to substitute petrol for individual transport, which is projected to have

enormous growth rates over the coming 30 years.

Bio-Fuels and Food security

Biofuels do have certain beneficial impacts, it will be difficult to justify their promotion if such policies trigger diversion of land to biofuels and disincentivize production of food crops, thereby contributing towards rise in food prices—the so called food–fuel trade-off. In India, a large section of the population still ekes out a living below the poverty line and an increase in food prices is particularly damaging. With a reduction in food consumption due to higher prices, there could be a drastic increase in the incidence of hunger. The food–fuel conflict has led to a search for alternative non-edible feed stocks that can be grown on unused marginal lands or waste lands, and thus may not pose a threat to food security.

Bio-Fuels and Environmental Impact

India, the biggest emitter of greenhouse gases after the US and China, plans to reduce its carbon footprint by 33-35% from its 2005 levels by 2030, as part of its commitments to the United Nations Framework Convention on Climate Change adopted by 195 countries in Paris in 2015.

The interest in biofuels, apart from promoting energy security, is also aimed at mitigating the threat of climate change by substituting petroleum fuels. According to IPCC (2007) biofuels have a large potential towards GHG emissions reduction in the transportation sector. The increased burning of fossil fuels increases the air pollution and also contributes to global warming. Further, it will prevent stubble burning as agriculture waste can be utilized for production of biofuels. But there are concerns regarding over exploitation of land and water resources due to cultivation of plants like jatropha.

Challenges in Promotion and Use of Bio-fuels

- The production of biofuels is still expensive, beneficial externalities are not counted.
- Proper transfer and induction of newer technologies regarding the biofuel production and conservation technologies for certain biofuels are still immature (e.g. for synthetic biofuels.)
- Strict maintenance of the achievable high standard and quality. This must be strictly enforced, implemented and audited timely.
- Depending on the type of biofuel, new or modified infrastructures are needed.
- Biomass feedstock sources may compete with food supply.
- Conflict between “promoters” of first and second generation bio-fuels may weaken the overall development of biofuels.
- The environmental impacts like acidification, eco-toxicity, eutrophication and water depletion need to be considered. Extra attention is needed to reduce the other impacts on the environment.
- Extensive research and development to standardize and increase the efficiency of the biofuels.
- Awareness and capacity building must be given good share of priority as until and unless people

are not aware of the importance and significance the sustainability of the process, project and propagation will not last long.

- Special creation of the grants for undergoing research in the locally available resources for the production of the biofuels.
- Mainstreaming the importance, acceptance and adoption of the biofuels.
- Cooperative works must be promoted between the farmers, growers, institutions both educational and financial.
- Sustainable production of the high quality biofuel feedstocks through intense and active local communities.
- Proper utilization of the end products.
- Participation from all the states.

Way Forward

The government should take steps in the direction of setting up regulating nurseries certification of seeds and planting materials and to regulate the mechanism of cultivation of raw materials.

An up-to-date technology policy is central to bring in efficiency in production which is also cost-effective so that the industry would survive on its own without any subsidies or support.

The focus on research has to be sustained to explore the feasibility of

environment-friendly and economically sustainable feed stocks. Offer opportunities for promoting local level entrepreneurship and enhancement of women’s participation.

Ambiguity in land rights is also considered as an issue in development of wastelands for biofuel. Therefore, the facts regarding such arguments also need to be verified before opting for a full-fledged expansion of biofuels in the country.

Modification in the engines of the vehicles so that it can run on hybrid fuels. The government should adopt some of the measures from the success of biofuels in countries like Brazil and Canada.

A caution is required in interpreting the environmental and socio-economic implications of biofuel production due to limited field experience as well as absence of evidence from the field studies on the negative impacts of biofuel production. India has to develop and adapt sustainable biofuel production practices to minimize any adverse impact and to promote potential synergies with respect to reclamation of degraded lands, creation of rural livelihoods and promotion of energy security.

General Studies Paper- III

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



SEVEN SUBJECTIVE QUESTIONS WITH MODEL ANSWERS

Giant MNCs vs Developing and Underdeveloped Economies

Q1. Highlight the significance of Walmart- Flipkart deal and the challenges before Indian economy.

Hints:

- The \$1-billion online grocery space is all set for the big battle, with deep-pocketed players signalling expansion and strengthening of operations. Walmart's recently-acquired 77% stake in Flipkart could lead to a larger focus on the food and grocery segment.
- The deal is going to shake things up. The world's biggest retail deal will impact the whole segment, the competitors and the consumers. Walmart has for years tried to enter India but has remained confined to a 'cash-and-carry' wholesale business amid tough restrictions on foreign investment. It currently operates 21 such stores in India.
- The war between Flipkart and Amazon will not only create a vast infrastructure of supply chain but also a large number of jobs. India's total consumption is expected to rise to \$3.6 trillion in 2027 from \$1.3 trillion in 2016, according to industry data.
- The retail market is expected to hit \$1.8 trillion from \$650 billion in 2016. Of this, the biggest driver is expected to be food and grocery, pegged at \$1.1 trillion in 2027 from \$420 billion in 2016, which will drive a separate and similarly substantial investment by Walmart in agriculture.
- Online sellers on Flipkart are jittery because Walmart can wipe them off. Walmart, a \$500 billion American behemoth, has a reputation of killing small businesses with ultra-low prices. They fear that Walmart might bring in its own private labels via Flipkart to the Indian consumers, adding to competitive pressures.
- The two top traders' bodies, including the Confederation of All India Traders (CAIT), have moved the fair-trade regulator against the deal. Traders across India are fearful that it would lead to a monopoly of few companies like Walmart due to huge cash reserves at their disposal.

They called the deal a nightmare for domestic retail trade, which would create massive job loss.

- Probably the most serious concern is that small countries are at a disadvantage in dealing with large multinationals. That giant firm may have annual revenue much larger than the small country's GNP. The multinational may be the largest employer, landowner and taxpayer in a small country. That can threaten the sovereignty of the host (capital-importing) country in dealing with a firm that is larger and more powerful than the government.
- The Walmart-Flipkart deal is a signal of maturing online retail segment in India. The deal signifies the entry of giant US retailer into an online market segment in India. This brings in line the other MNCs like Alibaba also to the shores of Indian online retail market. There are fear among brick mortar shops and other affected people. The government is enthusiastic about the FDI flow and the tax authorities on the tax. The economy is surely to get a boost from the deal. But the ultimate winner of the deal is the online customer with more choices at competitive prices.

20 Years of Pokhran and India's Nuclear Ambitions

Q2. India's nuclear journey started with Pokhran I and now India is more than just a nuclear power. Comment.

Hints:

- India marked the 20th anniversary of the Pokhran nuclear tests, covering a journey from being a sanctions-hit country to getting a special waiver from the elite Nuclear Suppliers Group paving the way for signing civil nuclear deals with the United States (US) and several other countries.
- India had been grappling with a proximate nuclear challenge since October 1964 when China acquired its nuclear weapon capability and Beijing became the fifth member of the global nuclear club. Consequently India's strategic profile had to contend with this reality

of a nuclear armed neighbor with whom it had a very strained relationship post the October 1962 border war. India sought to redress this imbalance by carrying out a nuclear test (Pokhran I) in May 1974.

- The Pokhran-II nuclear weapons tests, code-named 'Operation Shakti,' are considered different from the 1974 Pokhran-I exercise, code-named 'Smiling Buddha,' because back then India conducted one detonation that it designated a "peaceful nuclear explosion".
- The tests shocked the world, particularly because they were done with utmost secrecy and the India-U.S. ties hit rock bottom. For nearly two months, the U.S. refused to have any dialogue with India and implemented the Glenn Amendment for the first time. Newer sanctions were imposed.
- After getting the NSG waiver, the US signed the historical nuclear cooperation agreement with India a decade later. The deal with the US not only paved the way for India to gain access to critical space and nuclear technologies; it made import of supercomputers and high-technology equipment easier.
- Following the waiver, France was the first country to sign a civil nuclear cooperation agreement with India. India also reached civil nuclear cooperation accords with several other countries after that. India now has nuclear cooperation agreement with the UK, Russia, Australia, Japan, Canada, Argentina, South Korea, Kazakhstan, Namibia, Bangladesh, Sri Lanka and Vietnam. Since then, India has become a member of the Missile Technology Control Regime and the Wassenaar Arrangement. While India joined the MTCR in 2016, it entered the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies last year.
- India's nuclear doctrine hasn't changed in the last two decades and some experts have raised issues vis-a-vis the no first use policy and also suggested a policy of flexible response. The status quo cannot be cast in stone, changes to our nuclear doctrine need great deliberation. It must be remembered that nuclear weapons are meant for deterrence and not really for war fighting. The current doctrine and nuclear readiness of India is also focused on deterring any possible nuclear capable adversary.
- There is need to revisit the term 'massive' in terms of the envisaged retaliation within the nuclear doctrine. It has a negative impact on the nuclear-conventional war interface. Instead, it is suggested that the term 'flexible retaliation doctrine' for better escalation control.

Overcrowding of Prisons: The Problem Still Persist

Q3. Overcrowding of prisons is not just an administrative concern but also a humanitarian concern. Comment.

Hints:

- 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 Supreme Court pulled up state governments and Union territories over the condition of jails, saying prisoners "cannot be kept in jail like animals."
- According to the Prison Statistics India report by the National Crime Records Bureau (NCRB), India's prisons are overcrowded with an occupancy ratio of 14% more than the capacity. More than two-thirds of the inmates are under-trials. Chhattisgarh and Delhi are among the top three in the list with an occupancy ratio of more than double the capacity.
- As a matter of fundamental rights guaranteed by the Indian constitution, under-trials are presumed innocent till proven guilty. But they are often subjected to psychological and physical torture during detention and exposed to subhuman living conditions and prison violence. Many lose their family neighbourhood and community ties and, more often than not, their livelihoods.
- Moreover, prison time attaches social stigma to them as individuals and as community members. Even their families, relatives and communities are not immune to disgrace and humiliation. Even after their acquittal, under-trials find their employability severely jeopardised for none of their faults.
- Following the Supreme Court direction (1996) in Ramamurthy vs State of Karnataka to bring about the uniformity nationally of prison laws and prepare a draft model prison manual, a committee was set up in the Bureau of Police Research and Development (BPR&D). In 1999, a draft Model Prisons Management Bill (The Prison Administration and Treatment of Prisoners Bill-1998) was circulated to replace the Prison Act, 1894 by the government of India to the respective states.
- The Model Prison Manual, 2016 has a dedicated chapter on 'Undertrial Prisoners', which provides guidance on the facilities to be provided to undertrials viz. legal defence, interview with lawyers, signing of

Vakalatnama, application to Courts for legal aid at Government cost etc. These measures are also focused at reducing overcrowding in prisons.

- The National Legal Services Authority (NALSA) has also been providing free legal services to all under trial prisoners through its legal service clinics running in jails all over India. NALSA is also promoting plea bargaining for quick disposal of cases falling within the parameters spelt out in the provisions of plea bargaining given in Code of Criminal Procedure.
- Semi-open prisons or open prisons should be encouraged. It allows 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. The government needs to build more prisons and employ more staff to make their functioning more transparent and humane.

New Dawn in Indian Railways

Q4. Highlight the steps taken by Indian Railways to make itself more user friendly, customer oriented and expanding its reach to cater to growing demands/needs of the users in 21st century.

Hints:

- Indian Railways are the transport of masses. They had been the beasts of burden and have been catering to the passenger and cargo needs of the citizens of India. It is also the biggest employer in the country. With the rising population and more competitive mass transport facilities coming up, railways has to revamp its working to better serve the changing needs of the passengers and other cargo services.
- There were many committees setup to revamp and upgrade Indian Railways such as Bibek Debroy committee and Anil Kakodkar committee.
- To improve quality of travelling in general class, railways rolled out its first modern unreserved coach 'Deen Dayalu' with facilities like potable drinking water, mobile charging points and bio-toilets among others to be used in mail and express trains.
- Stepping up efforts to make environment better, the railways has set a target to install bio-toilets in all coaches to ensure the entire rail network as zero discharge zone by 2019. Railways has also set a target of increasing the use of bio-diesel upto 5 per cent of its total diesel consumption and also to focus on clean fuel like solar and wind energy to reduce emission in a significant way.

- India and Japan are collaborating on the Mumbai–Ahmedabad High Speed Rail Project using Shinkansen technology covering a total of 508 km. A new entity named National High Speed Rail Corporation Ltd was set up in February 2016 to implement the project.
- Being the largest enterprise in the nation and having pressure of ever increasing population, Indian Railways has been on a constant paddle for improvement and upgradation. With the 21st century, the focus is not just on transporting man and material from point A to point B, but on customer satisfaction, energy efficiency, connectivity, harnessing information and communication technology (ICT) to streamline its processes and procedures. Additionally to upgrade its administrative machinery and capacity, so as to meet the challenges that come forth with the changing demands of the nation and its developmental needs.
- Indian Railways has always been the focus and driver of growth since independence. The inclusion of Railways Budget into general budget has also linked it better with the national financial planning activity where the transfer and balancing of funds can happen smoothly. Thereby we see that it's not just at constitutional level but on various fronts that the railways are embarking upon the journey to improvement and coming in new avatar in the changing times.

Understanding the Darknet

Q5. Darknet occupies a major proportion of internet but is still elusive to the netizens. Explain the Darknet and highlight the difference between Darknet and Deepweb.

Hints:

- The dark net has continued to make headlines over the last decade as a mysterious part of the internet where criminals lurk and engage in illegal activities, all from the privacy of home computers. Stories of the infamous Silk Road or AlphaBay markets, where users can order illicit drugs online, may come to mind. Or perhaps you have heard about the anonymous digital currency, Bitcoin.
- A hidden internet exists underneath the 'surface web,' hidden from the view of ordinary web users. The darknet refers to networks that are not indexed by search engines such as Google, Yahoo or Bing. These are networks that are only available to a select group of people and not to the general internet public and only accessible via authorization, specific software and configurations.
- A darknet is a routed allocation of IP address space that is not discoverable by any usual means. The term is

used to refer to both a single private network and the collective portion of internet address space that has been configured in that manner.

- Users of this darknet are truly anonymous and it is this anonymity that attracted the criminal element to it. Here they are free to conduct their business and express themselves without fear of repercussion. It has become a haven for criminals selling drugs and guns, human trafficking and scamming.
- Most people are confused about what exactly the darknet is. Firstly, it is sometimes confused with the deep web, a term that refers to all parts of the internet which cannot be indexed by search engines and so can't be found through Google, Bing, Yahoo, and so forth. Experts believe that the deep web is hundreds of times larger than the surface web.
- The dark web (or dark net) is a small part of the deep web. Its contents are not accessible through search engines, but it's something more: it is the anonymous Internet. Within the dark net, both web surfers and website publishers are entirely anonymous. Whilst large government agencies are theoretically able to track some people within this anonymous space, it is very difficult, requires a huge amount of resources and isn't always successful.
- In coming years governments will be tasked with drafting and implementing more nuanced cyber laws that detail what kind of encryption and privacy tools can be used, by whom and for what purposes. With the rise of computers and digital networking over the past four decades, governments have had to draft cyber laws and the same will apply to dark net technology.

Monument Mitra: Caretaker or Exploiter

Q6. What is 'Adopt a Heritage' scheme? The heritage of a country is national property. It should be available to everybody and should not represent the agenda or interests of a private company. Critically analyse.

Hints:

- The 'Adopt a Heritage: Apni Dharohar, Apni Pehchaan' scheme is an initiative of the Ministry of Tourism, in collaboration with the Ministry of Culture and the Archaeological Survey of India. It was launched in September 2017 on World Tourism Day.
- Recently, Ministry of Culture had signed a Memorandum of Understanding with the Dalmia Bharat group for the restoration of Delhi's Red Fort under 'Adopt a Heritage' scheme. Other memorandums of understanding signed under the project are the Mount Stok Kangri trek route in Ladakh by Adventure Tour Operators Association

of India (ATOAI), Gangotri temple area and trail to Gaumukh, Uttarakhand by ATOAI and Gandikota Fort, Andhra Pradesh by Dalmia Bharat Limited.

- Under the scheme, the government has put up a list of over 93 ASI monuments that can be bid for by private and public sector firms, as well as individuals. This is a pretty small list, as the ASI protects 3,686 ancient monuments and archaeological sites, including 36 world heritage sites. So far, 31 agencies or Monument Mitras have been approved to adopt 95 monuments/tourist sites. However, only four MoUs have been signed.
- From a corporate's point of view, there are three obvious benefits to the brand or the corporate. Firstly, there's tremendous brand visibility as the footfalls and media coverage is guaranteed by the heritage sites itself. Secondly, the prestige that the association bestows on the brand can add much lustre to the brand's image. Third is the direct revenue earning potential from using the heritage site as a venue for hosting events.
- What the country probably gains is better maintenance, upkeep and overall management of the national heritage. Under the contract, the Dalmia Bharat group will have to provide certain basic amenities within six months. These include providing drinking water kiosks, street furniture-like benches and shop signage. Then there are tasks that have to be completed within a year.
- The heritage of a country is national. It should be available to everybody and should not represent the agenda or interests of a private company. Moreover, the heritage sites are being partially maintained from taxpayers' money (but also by income from tickets). If the government is unable to maintain the sites properly and gives this responsibility to a private company, is it fair the government is still taking the taxpayers' money?
- The purpose of 'Adopt a Heritage' scheme is to provide basic facilities to these heritage sites, which include cleanliness, convenience to the public and easy accessibility. What's interesting is that there exist a variety of schemes that cater to similar missions and visions that are financed using taxpayer money. With this in mind, an important question arises – Why is that we need to tap into CSR funds for this programme when ASI has the required capabilities for the restoration of Buddhist sites in Afghanistan, Laos, Cambodia and Myanmar?
- CSR should rather focus on issues that impact the health of the nation and other key areas that aren't being effectively managed by the government. Hence, CSR should focus on rural healthcare delivery and sanitation in order to make sure that our demographic dividend doesn't crumble due to the multiplier effects of poor health.
- What the country probably gains is better maintenance, upkeep and overall management of the national

heritage. However, the move reflects the deficiencies of the Ministry of Culture and ASI, whose responsibility it should be to ensure that these cultural treasures are well maintained. Or its marketing, which should be the responsibility of the Ministry of Tourism. It is a real pity that the government is incapable of performing these duties.

Biofuels: An Alternative to Fuel

Q7. Briefly explain the various generations of biofuels and highlight the feature of National Policy on Biofuel-2018. Also highlight the various challenges in promotion and use of biofuels.

Hints:

- Biofuels are liquid or gaseous fuels primarily produced from biomass and can be used to replace or can be used in addition to diesel, petrol or other fossil fuels for transport, stationary, portable and other applications. Crops used to make biofuels are generally high in sugar (such as sugarcane, sugarbeet and sweet sorghum), starch (such as maize and tapioca) or oils (such as soybean, rapeseed, and coconut, sunflower).
- First generation biofuels: First generation biofuels are made from biomass consisting of sugars, starch, vegetable oils, animal starch or biodegradable output wastes from agriculture, industry, forestry and households using conventional technologies. Bio-diesel and bio-ethanol comes under first generation bio-fuels.
- Second generation biofuels: These are produced from non-food crops such as cellulosic biofuels and waste biomass (stalks of wheat and corn and wood). Examples include advanced biofuels like bio-hydrogen and bio-methanol.
- Third and fourth generation bio-fuels: The third generation biofuels include Algal biodiesel, Algal hydrogen and conversion of biomass to hydrogen whereas the fourth generation biofuels include biofuels from high solar efficiency cultivations. However, these are still at a nascent stage.
- The Union Cabinet has approved the 2018 National Policy on Biofuels. Reduced dependency of imports and environmental benefits are among the goals for the legislation. The policy categorises biofuels as "Basic Biofuels" viz. first generation (1G) bioethanol & biodiesel and "Advanced Biofuels" - Second Generation (2G) ethanol, Municipal Solid Waste (MSW) to drop-in fuels. It enables extension of appropriate financial and fiscal incentives to third Generation (3G) biofuels.
- Farmers are at a risk of not getting appropriate price for their produce during the surplus production phase. Taking this into account, the policy allows use of surplus food grains for production of ethanol for blending with petrol with the approval of National Biofuel Coordination Committee.
- The policy expands the scope of raw material for ethanol production by allowing use of sugarcane juice, sugar containing materials like Sugar Beet, Sweet Sorghum, Starch containing materials like corn, cassava, damaged food grains like wheat, broken rice, rotten potatoes, unfit for human consumption for ethanol production.
- Challenges in promotion and use of biofuels are:
 - ♦ The production of biofuels is still expensive, beneficial externalities are not counted.
 - ♦ Proper transfer and induction of newer technologies regarding the biofuel production and conservation technologies for certain biofuels are still immature (e.g. for synthetic biofuels.)
 - ♦ Strict maintenance of the achievable high standard and quality. This must be strictly enforced, implemented and audited timely.
 - ♦ Depending on the type of biofuel, new or modified infrastructures are needed.
- A caution is required in interpreting the environmental and socio-economic implications of biofuel production due to limited field experience as well as absence of evidence from the field studies on the negative impacts of biofuel production. India has to develop and adapt sustainable biofuel production practices to minimize any adverse impact and to promote potential synergies with respect to reclamation of degraded lands, creation of rural livelihoods and promotion of energy security.



SEVEN IMPORTANT NATIONAL & INTERNATIONAL NEWS

NATIONAL

1. Swachh Survekshan 2018

The Swachh Survekshan 2018 results have been announced. It was organized by the Ministry of Housing and Urban Affairs (MoHUA), under the aegis of the Swachh Bharat Mission (Urban) assessed 4,203 Urban Local Bodies (ULBs). During Swachh Survekshan 2018, a record number of 37.66 lakh citizen feedbacks were collected and 53.58 lakh Swachhata Apps downloaded.

The on-field survey for Swachh Survekshan has been conducted by an independent agency and the data for ranking of the cities collected from 3 sources:

- **Service Level Progress:** To verify whether systems and processes are in place in Urban Local Bodies (ULBs) to implement Swachh Bharat Mission (Urban) in the most efficient way.
- **Direct Observation:** To verify and assess general cleanliness in the cities by making random field visits in different parts of the city and public conveniences (Community/ Public Toilets).
- **Citizens Feedback:** To collect feedback directly from citizens and monitor the performance of Swachhata App, a citizen's

grievance Mobile App.

Key Highlights

- Indore has bagged the title of the cleanest city in India, followed by Bhopal and Chandigarh.
- Jharkhand was adjudged the best-performing state in the survey followed by Maharashtra and Chhattisgarh.
- Vijayawada is the cleanest among big cities having more than one million population while Mysuru has emerged as the cleanest among cities with pollution of three lakh to one million. ■

2. BSE: First Indian Exchange to get US SEC Recognition

Asia's oldest bourse BSE has become the first Indian exchange to be designated as a 'Designated Offshore Securities Market' (DOSM) by the United States Securities and Exchange Commission (SEC). The DOSM status allows sale of securities to US investors through the trading venue of BSE without registration of such securities with the US SEC, which eases the trades by US investors in India.

The recognition will also enhance the attractiveness of Indian Depository Receipts (IDRs) amongst US investors. BSE's new status will provide additional benefits to companies whose securities

are traded both in the US and on BSE.

An IDR is a depository receipt denominated in Indian rupees issued by a domestic depository in India. Much like an equity share, it is an ownership pie of a company. Since foreign companies are not allowed to list on Indian equity markets, IDR is a way to own shares of those companies. These IDRs are listed on Indian stock exchanges. IDRs are similar to equity shares. IDR holders have the same rights as shareholders;



they can vote for or against company moves or decisions as and when it comes to them, get dividends, bonus and rights issues as and when the company declares them. ■

3. National Institute of Mental Health Rehabilitation

The Union Cabinet has approved the establishment of National Institute of Mental Health Rehabilitation (NIMHR) at Bhopal as a Society under the Societies Registration Act, 1860 under the aegis of the Department of Empowerment of Persons with Disabilities.

The main objectives of the NIMHR are to provide rehabilitation services

to the persons with mental illness, capacity development in the area of mental health rehabilitation, policy framing and advanced research in mental health rehabilitation. The institute will have nine departments/centres and will conduct 12 courses to offer diploma, certificate and graduate, post graduate, M. Phil degrees in the area of mental health rehabilitation.

NIMHR will be the first of its kind in the country in the area of mental health rehabilitation. It will serve as an institution of excellence to develop capacity building in the area of mental health rehabilitation and also help the government to develop models for effective rehabilitation of persons with mental illness.

4. Network for Spectrum (NFS) Project

The government approved higher budget allocation for laying of alternate communication network for defence services in turn for release of spectrum held by the armed forces. The alternative communications network is being set up in lieu of airwaves vacated by the Defence

Ministry for civilian use. The project, which is being implemented by state-run Bharat Sanchar Nigam Limited (BSNL), will be completed in a period of 24 months. The NFS project will boost the communication capabilities of the defence forces in a major way leading to enhanced national

operational preparedness. The project will also have forward linkages to other related industries such as telecom equipment manufacturing and other telecommunication related services.

5. Micro-irrigation Fund

The government approved a corpus of Rs 5,000 crore for the setting up of a dedicated micro irrigation fund (MIF) under the National Bank for Agriculture and Rural Development (NABARD). The dedicated fund would supplement the efforts of PradhanMantriKrishiSinchayeeYojana (PMKSY) and help bring about 10 lakh hectares under micro-irrigation.

The fund will facilitate states to mobilise resources for their initiatives, including additional (top up subsidy) in implementation of PMKSY to achieve the annual target of about two million hectares per year during the remaining period of 14th Finance Commission. The states can access this fund for innovative integrated projects, including projects in the public private partnership (PPP) mode and also for incentivizing micro-irrigation. Farmers producers organization (FPO)/

cooperatives/state level agencies can also access the funds with state government guarantee or equivalent collateral. Farmers Co-operatives may access this fund for innovative cluster based community irrigation projects.

The government expects that the states which are lagging behind in adoption of micro irrigation would also be encouraged to take advantage of the fund for incentivizing farmers as being done by the good performing states. The task force on micro irrigation had estimated a potential of 69.5 million hectare under micro irrigation, whereas the area covered so far is only about 10 million hectare.

About PMKSY

It was launched in 2015. The major objective of PMKSY is to achieve convergence of investments in irrigation at the field level, expand

cultivable area under assured irrigation, improve on-farm water use efficiency to reduce wastage of water, enhance the adoption of precision-irrigation and other water saving technologies (More crop per drop), enhance recharge of aquifers and introduce sustainable water conservation practices by exploring the feasibility of reusing treated municipal waste water for peri-urban agriculture and attract greater private investment in precision irrigation system. It is an umbrella scheme incorporating ongoing schemes of the Ministry like mega food parks, integrated cold chain and Value Addition Infrastructure, Food Safety and Quality Assurance Infrastructure, etc. and also new schemes like Infrastructure for Agro-processing Clusters, Creation of Backward and Forward Linkages, Creation / Expansion of Food Processing & Preservation Capacities.

6. Freight Village in Haryana

The government has approved the development of trunk infrastructure components for integrated multi-modal logistics hub — “Freight Village” — at Nangal Chaudhary in Haryana under the Delhi-Mumbai Industrial Corridor Project (DMIC).

A 'Freight Village' is a specialised industrial estate which attracts companies that require logistics services and can cluster to improve their competitiveness. This will allow relocation of retailers, warehouse operators and logistics service providers supplying the regional FMCG market. Due to its proximity to the main city, it will serve as a distribution centre and as a point of transfer between long distance transport by truck, rail and waterway and short distance distribution with delivery vans. 'Freight Village' includes an inter-modal terminal, which facilitates integration between different modes of transport.

About DMIC

Government of India is developing the Delhi Mumbai Industrial Corridor, as a global manufacturing and investment destination around 1,504 km long Western Dedicated Freight Corridor (DFC) as the backbone. Investment regions and industrial areas have been identified for development in this corridor, across six states namely



Enhancing Exports and Employment Opportunities through Freight Village

Union Cabinet has approved an Integrated Multi Modal Logistics Hub (IMLH) across 886.78 acres in Nangal Chaudhary, Haryana

- To generate employment for the entire logistics supply chain
- To reduce pollution and accident related costs
- To ensure high speed connectivity to key ports & industrial centres
- To be undertaken in 2 phases & phase 1 will be completed by 2020-21
- ₹1,029.49 crore to be sanctioned for development of phase 1

Gujarat, Haryana, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh.

About Western Corridor

In October 2006, the Indian government established a dedicated body, the Dedicated Freight Corridor Corporation of India (DFCCIL), to carry out the project. The western DFC

will separate freight and passenger traffic to increase the speed of freight movement. It will be used to transport fertilisers, food grains, salt, coal, iron & steel and cement. The project will eventually be linked to the Eastern DFC to form four hubs known as India's Golden Quadrilateral including Delhi, Mumbai, Chennai and Kolkata.

7. Bharat Inclusion Initiative

Indian Institute of Management Ahmedabad's (IIMA's) centre for innovation, incubation and entrepreneurship (CIIE) launched a \$25 million 'Bharat Inclusion Initiative' that will look to mentor and invest in start-ups in the early stage and seed segment over the next three-four years. The initiative received an initial pledge of \$12.5 million from the Bill

and Melinda Gates Foundation, the Michael and Susan Dell Foundation and Omidyar Network.

The Bharat Inclusion Initiative aims to provide a continuum of solutions to inclusion-focused tech entrepreneurs across the pre-incubation, seed and scale-up stage and help them jump to the next orbit. A large portion of urban

poor families in India do not have any formal access to financial services. This programme has an opportunity to take on this challenge, given India's leadership in building a cutting-edge public technology infrastructure that can be used to seamlessly deliver a variety of critical digital services to low-income families.

INTERNATIONAL

1. Essential Diagnostic Tests

The World Health Organisation (WHO) has published its first 'essential diagnostics list', a catalogue of tests needed to diagnose the most common conditions as well as a number of global priority diseases. The step was taken to address the problem of people's inability to access diagnostic services, thus failing to receive the correct treatment.

The essential diagnostics list concentrates on in-vitro tests like tests of blood and urine. Apart from this, 58 tests are listed for detection and diagnosis of a wide range of common conditions, thus providing an essential package that can form the basis for screening and management of patients. The remaining 55 tests are designed

for the detection, diagnosis and monitoring of 'priority' diseases such as HIV, tuberculosis, malaria, hepatitis B and C, human papillomavirus and syphilis.

Need

Today, many people are unable to get tested for diseases because they cannot access diagnostic services. Many are incorrectly diagnosed. As a result, they do not receive the treatment they need and, in some cases, may actually receive the wrong treatment. For example, an estimated 46% of adults with Type 2 diabetes worldwide are undiagnosed, risking serious health complications and higher health costs. Late diagnosis of infectious diseases

such as HIV and tuberculosis increases the risk of spread and makes them more difficult to treat.

Significance

Similar to the WHO Essential Medicines List, which has been in use for four decades, the Essential Diagnostics List is intended to serve as a reference for countries to update or develop their own list of essential diagnostics. In order to truly benefit patients, national governments will need to ensure appropriate and quality-assured supplies, training of health care workers and safe use. To that end, WHO will provide support to countries as they adapt the list to the local context.

2. Fastest Growing Black Hole of the Universe Discovered

Scientists have discovered the fastest-growing black hole known in the universe, describing it as a monster that devours a mass equivalent to our Sun every two days. The astronomers have looked back more than 12 billion years to the early dark ages of the universe, when this supermassive black hole was estimated to be the size of about 20 billion suns with a one per cent growth rate every one million years.

This black hole is growing so rapidly that it's shining thousands of times more brightly than an entire galaxy, due to all of the gases it sucks in daily that cause lots of friction and heat. The energy emitted from this newly discovered supermassive black hole, also known as a quasar, was mostly ultraviolet light but also radiated x-rays.

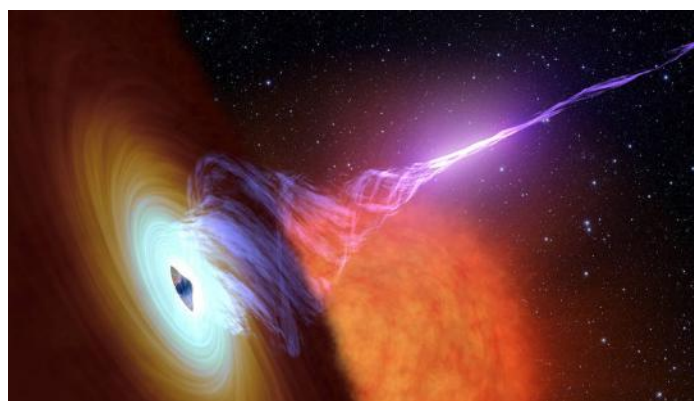
The SkyMapper telescope at the ANU Siding Spring Observatory detected this light in the near-infrared, as the light waves had red-shifted over the billions of light years to Earth.

The Gaia satellite

confirmed the object that they had found was sitting still, meaning that it was far away and it was a candidate to be a very large quasar.

About SkyMapper Telescope

SkyMapper is a state-of-the-art automated wide-field survey telescope. SkyMapper's mission



is to robotically create the first comprehensive digital survey of the entire southern sky. The SkyMapper Southern Sky Survey is running from 2014. SkyMapper will image each part of the sky 36 times; it will identify changes occurring within the Universe that would otherwise pass unnoticed.

3. Freshwater Redistribution

NASA's GRACE (Gravity Recovery and Climate Experiment) mission has confirmed that a massive redistribution of freshwater is occurring across Earth, with middle-latitude belts drying and the tropics and higher latitudes gaining water supplies. The results, which are probably a combination of the effects of climate change, vast human withdrawals of groundwater and simple natural changes could have profound consequences if they continue, pointing to a situation in which some highly populous regions

could struggle to find enough water in the future.

The resulting map of the findings shows an overall pattern, in which ice sheets and glaciers lose by far the most mass at the poles, but at the same time, middle latitudes show multiple areas of growing dryness even as higher latitudes and the tropical belt tend to see increases in water.

About GRACE Mission

The GRACE mission was selected as the second mission under the NASA

Earth System Science Pathfinder (ESSP) Program in May 1997. Launched in March of 2002, the GRACE mission mapped variations in Earth's gravity field. Designed for a nominal mission lifetime of five years, GRACE operated in an extended mission phase till 2017. GRACE is a joint partnership between the National Aeronautics and Space Administration (NASA) in the United States and Deutsche Forschungsanstalt für Luft und Raumfahrt (DLR) in Germany.

4. 'Green Good Deeds' Movement

The BRICS ministerial on Environment has agreed to include "Green Good Deeds", a societal movement to protect environment and promote good living, in its official agenda in the next ministerials of the grouping in Brazil and Russia.

- The campaign has been launched by the Environment Ministry to sensitise the people and students, in particular, about

climate change and global warming.

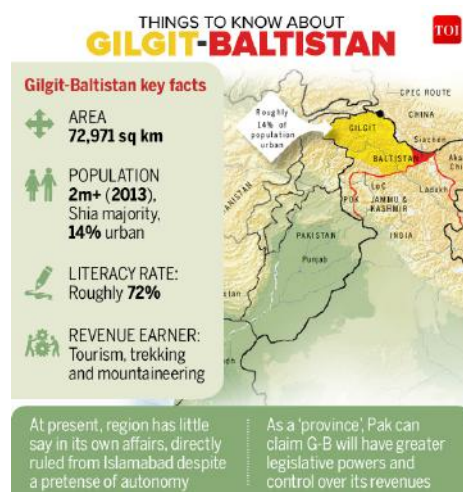
- The objective of the campaign is to restore and return the clean and green environment to the next generation.
- The Ministry of Environment, Forest & Climate Change had drawn up a list of over 500 Green Good Deeds and asked people to alter their behaviour to green

good behaviour to fulfil their green social responsibility.

International conferences on environment had been deliberating and adopting declarations. However, these declarations can be put to practice at the ground level, involving every section of the society. "Green Good Deeds" is an idea to take it to the people and get them involved.

5. More Autonomy to be given to Gilgit-Baltistan

Pakistan's top civil and military leaders have decided to give greater administrative and financial authority to Pakistan-occupied Kashmir and Gilgit-Baltistan, the region through which the \$50 billion China-Pakistan Economic Corridor (CPEC) passes. However, there was also consensus over retention of the PoK and Gilgit-Baltistan Councils as advisory bodies; and the grant of a five-year tax holiday to Gilgit-Baltistan so as to create adequate incentives for the development of the region and bring it



at par with the other areas of Pakistan. It is believed that China's concerns

about the unsettled status of Gilgit-Baltistan prompted Pakistan to change its status. Gilgit-Baltistan is treated as a separate geographical entity by Pakistan. Balochistan, Khyber-Pakhtunkhwa, Punjab and Sindh are four provinces of Pakistan.

India has termed as "entirely unacceptable" any possible attempt by Pakistan to declare the Gilgit-Baltistan region, bordering the disputed Pakistan-occupied Kashmir, as the fifth province.

6. World's First Floating Nuclear Power Station

To meet its growing electricity needs in remote Arctic regions, Russia has built a floating nuclear power station



'Akademik Lomonosov'. The 144-by-30-metre (472-by-98-foot) barge holds two reactors with two 35 megawatt nuclear reactors that are similar to those used to power icebreaker ships. It will be towed in the summer of 2019 to the port of Pevek in the autonomous Chukotka

region in Russia's extreme northeast.

Akademik Lomonosov will replace Pevek's aging Bilibino nuclear power plant and Chaunsk coal-fired power plant, saving about 50,000 tons of CO₂ emissions per year compared to the current levels. Upon its connection to the grid, Akademik Lomonosov will become the Northernmost nuclear installation in the world.

7. WHO Raised Ebola Health Risk to 'very high' in DR Congo

The World Health Organization (WHO) has raised the Ebola health risk assessment to "very high" in the Democratic Republic of Congo. More than 11,000 people died in the Ebola outbreak in West Africa mainly in Guinea, Sierra Leone and Liberia.

About Ebola

- Ebola virus disease (EVD), formerly known as Ebola haemorrhagic fever, is a severe, often fatal illness in humans.
- The virus is transmitted to people from wild animals and spreads in

the human population through human-to-human transmission.

- The average EVD case fatality rate is around 50%. Case fatality rates have varied from 25% to 90% in past outbreaks.
- Ebola is introduced into the human population through close contact with the blood, secretions, organs

or other bodily fluids of infected animals such as chimpanzees, gorillas, fruit bats, monkeys, forest antelope and porcupines found ill or dead or in the rainforest.

Early supportive care with rehydration, symptomatic treatment improves survival. There is as yet no licensed treatment proven to neutralize the virus but a range of blood, immunological and drug therapies are under development.

Ebola virus disease

Ebola, which first appeared in outbreaks in Sudan and DR Congo in 1976, is a severe and often fatal disease with no known specific treatment or vaccine. It has since killed more than 1,500 people in parts of Africa.

SOURCE

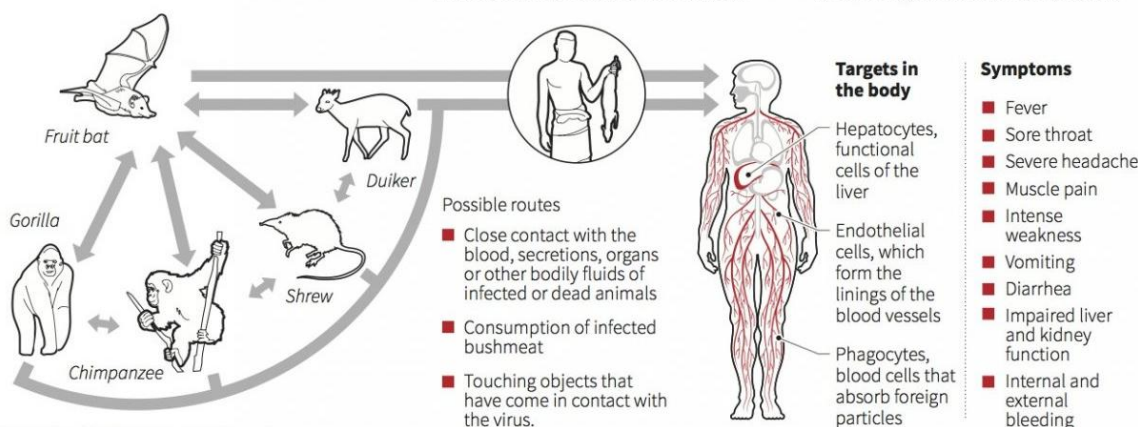
In Africa, particular species of fruit bats are considered possible natural hosts for Ebola virus.

TRANSMISSION

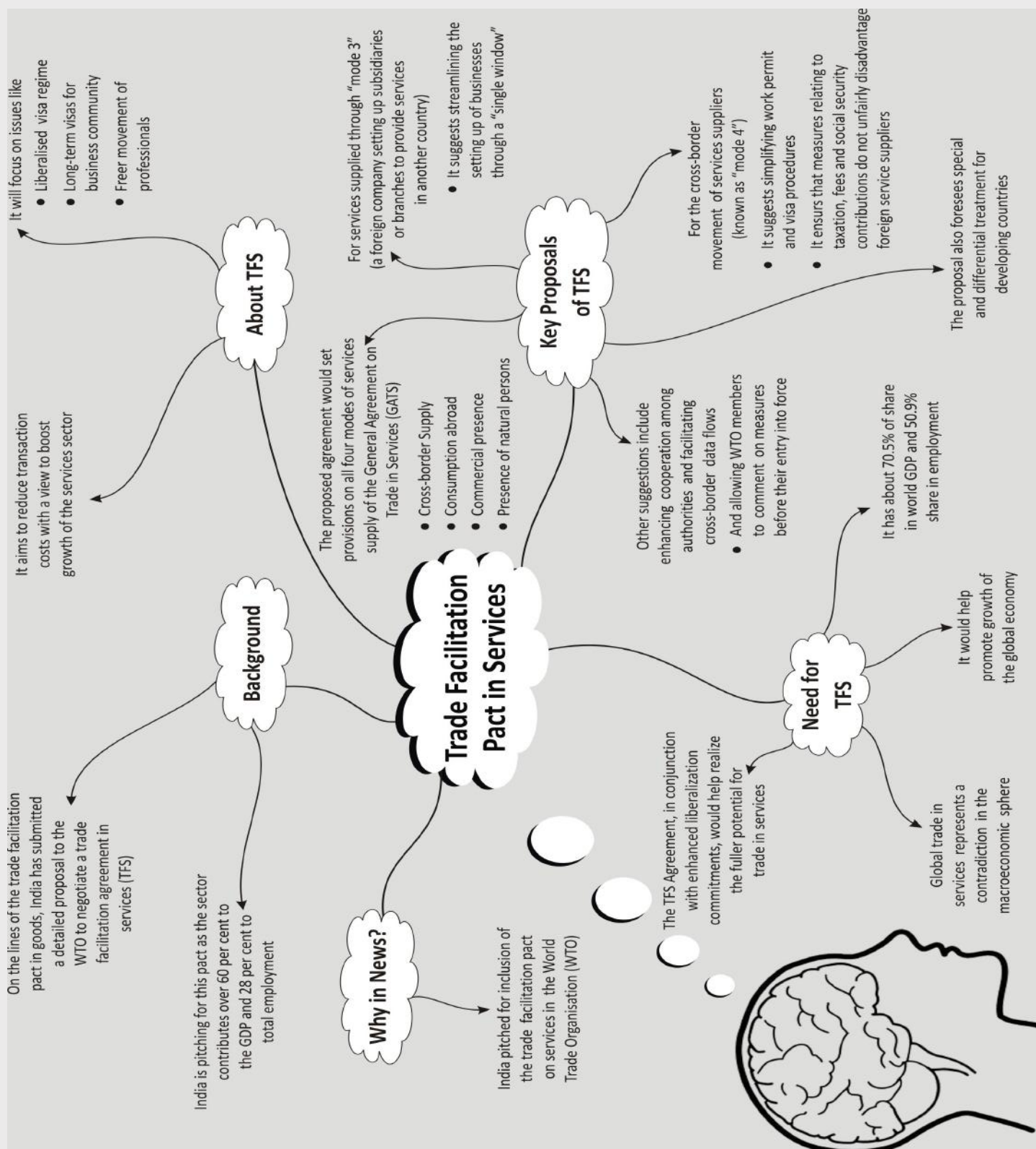
Infected bats are thought to transmit the disease to humans, or indirectly through other animals which are hunted for their meat.

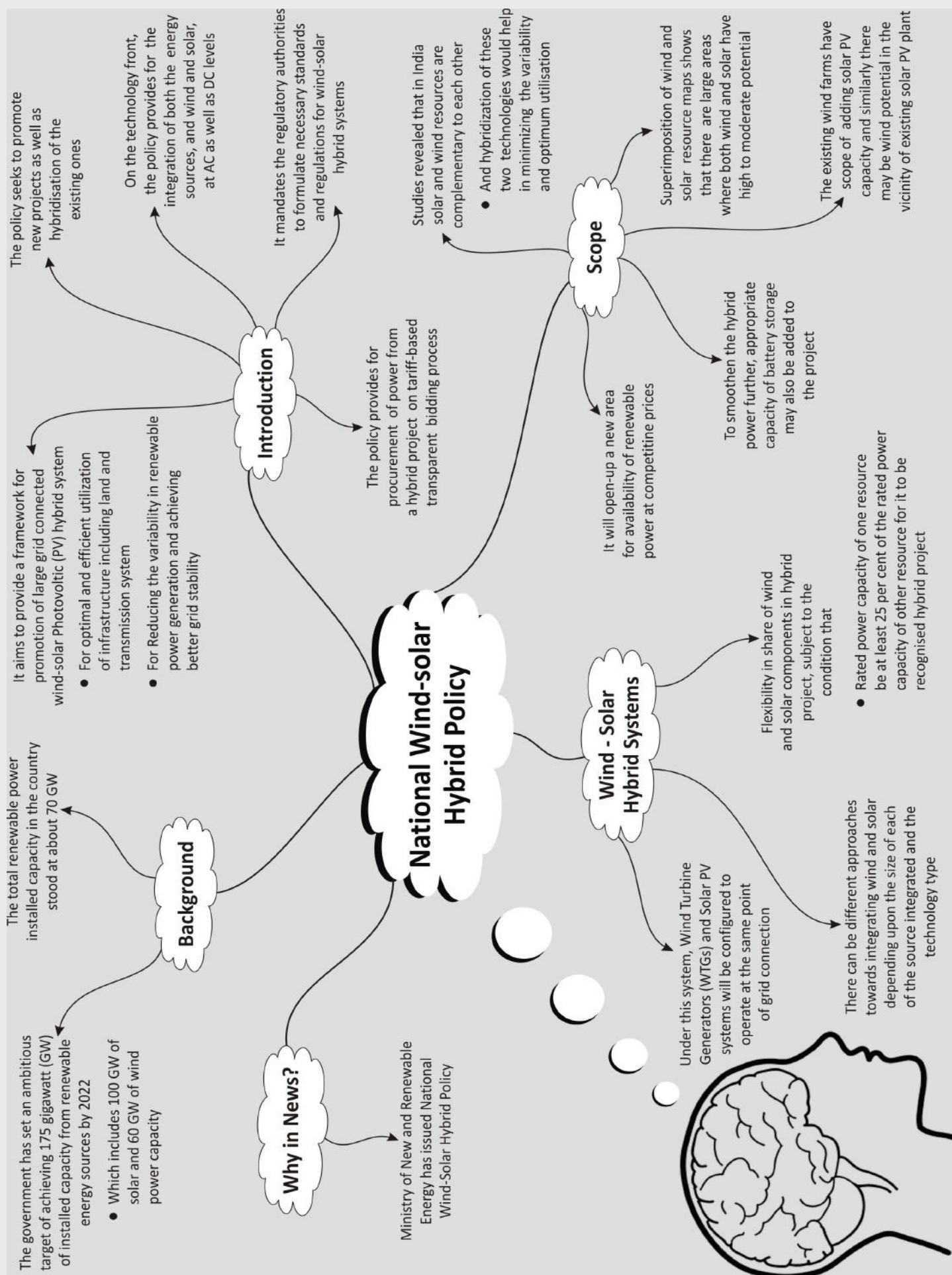
DAMAGE

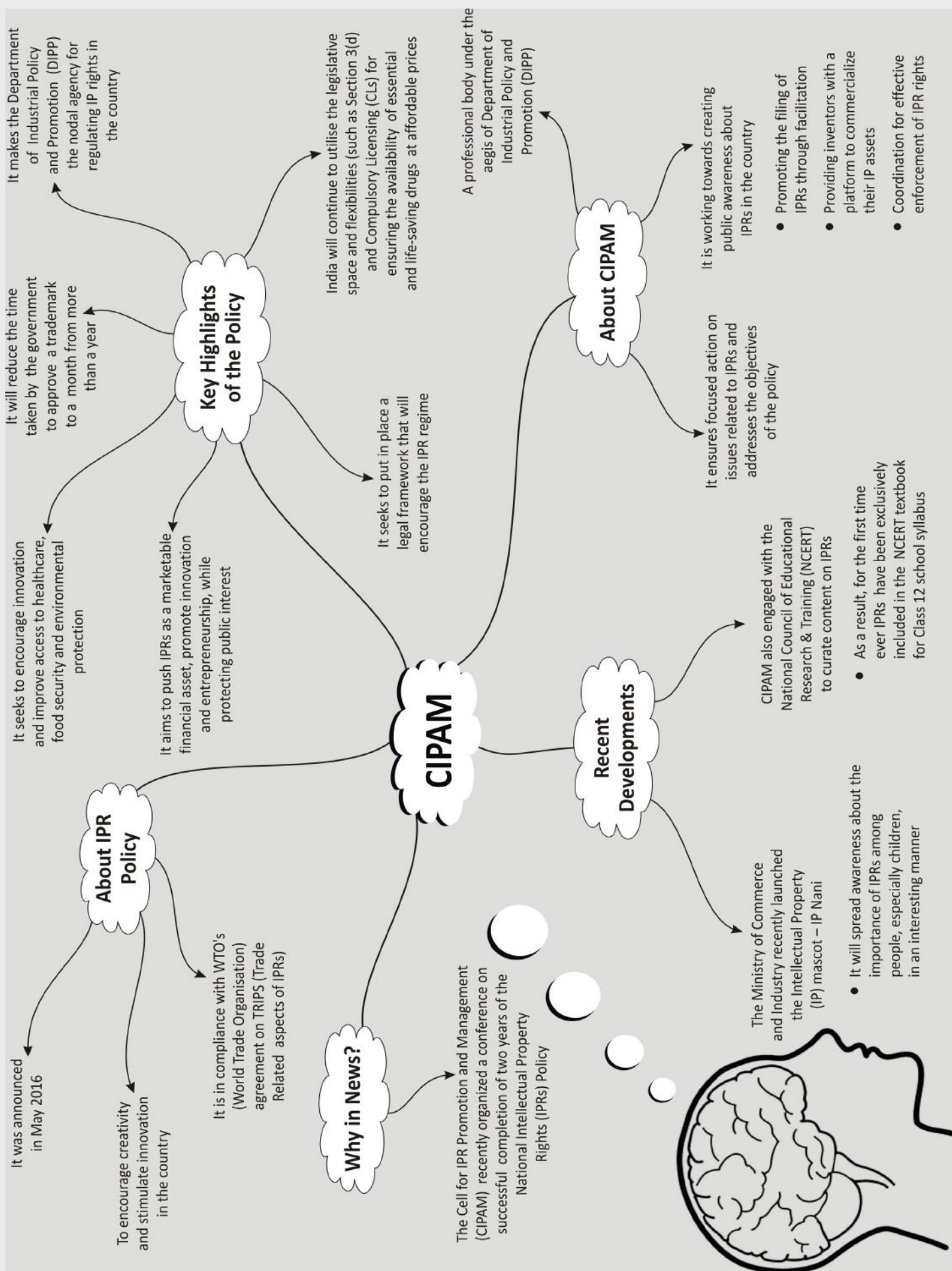
Incubation period is from two to 21 days. Death from the disease is often caused by multiple organ failure and tissue death.

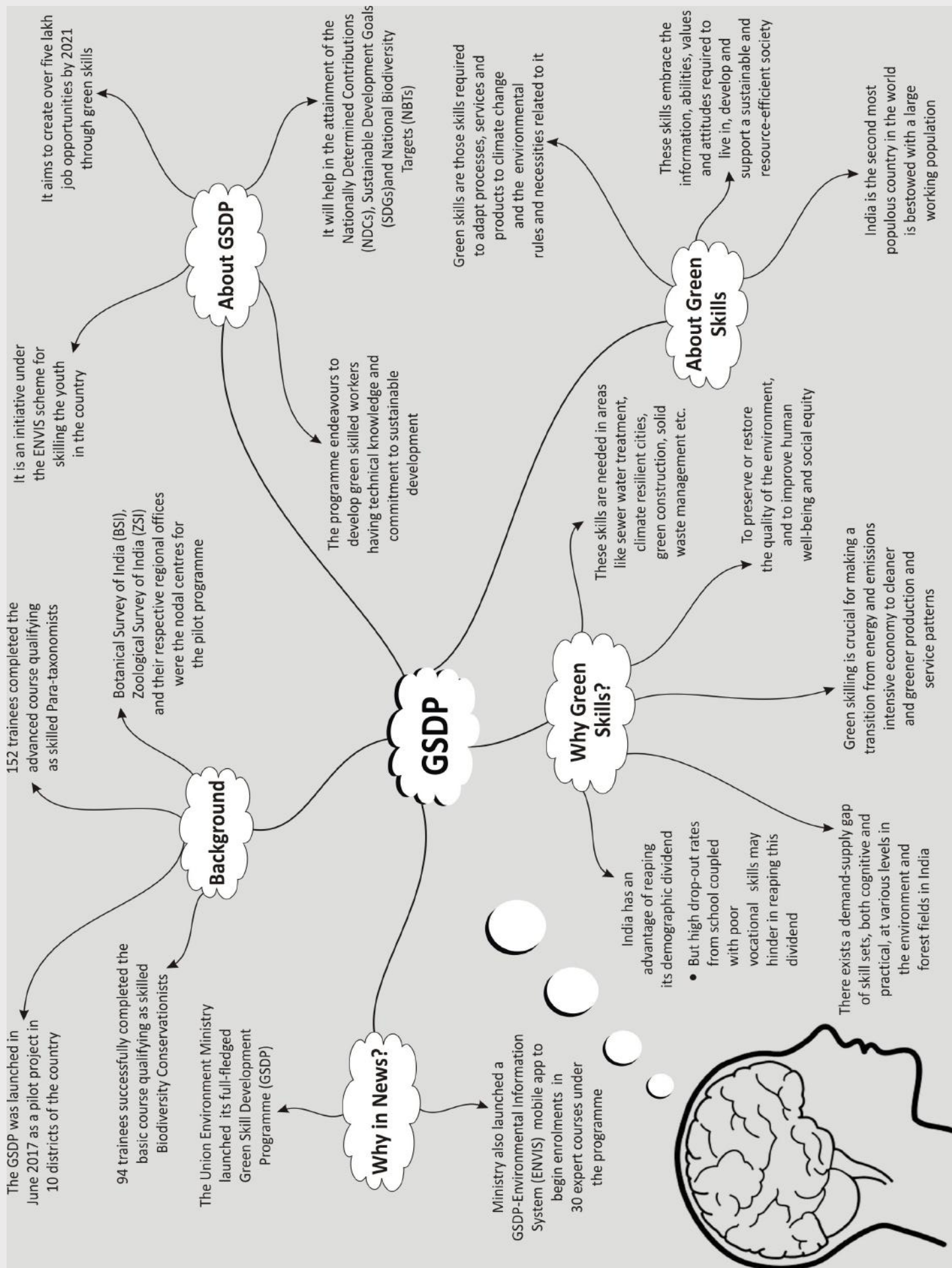


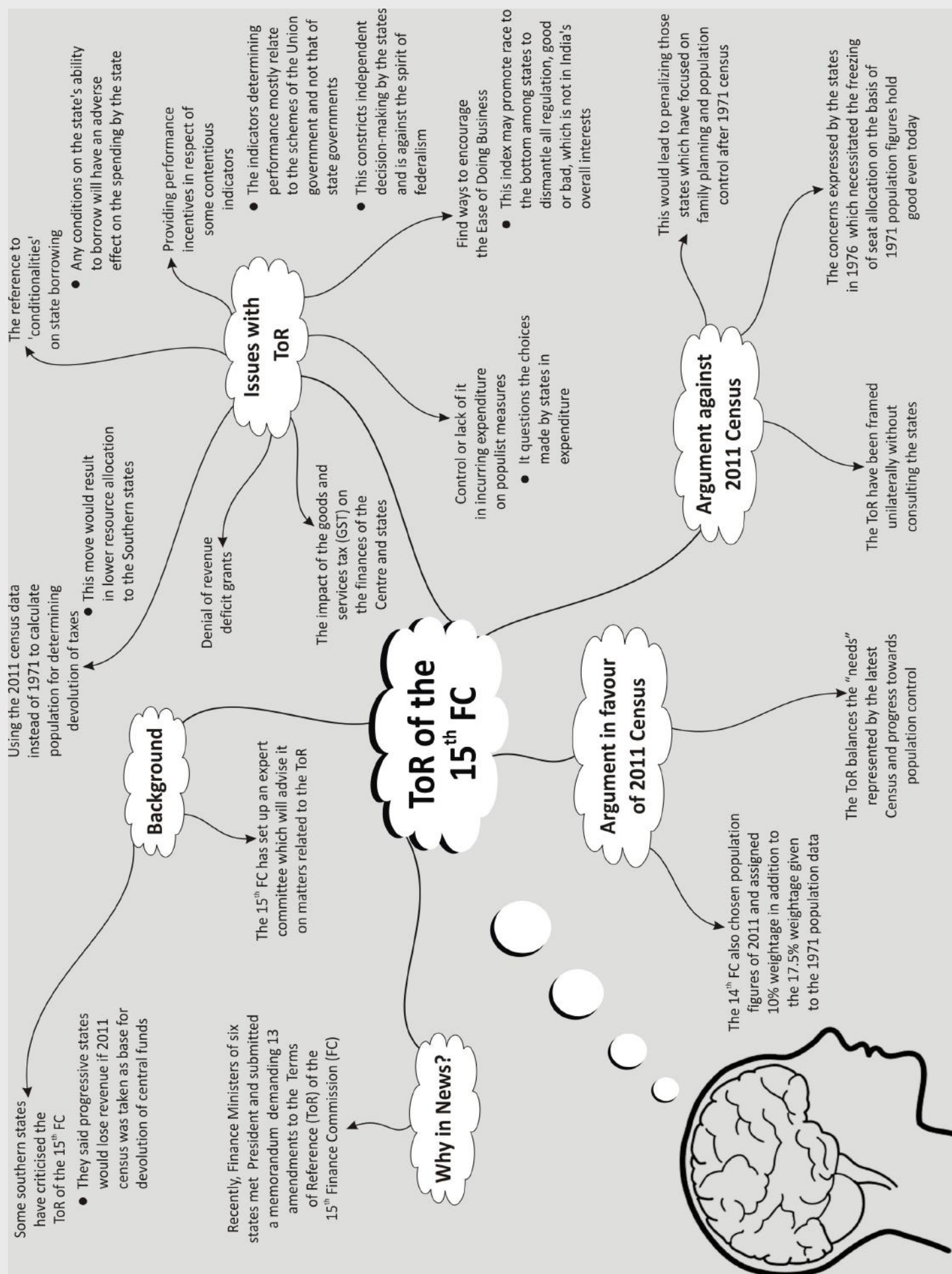
SEVEN BRAIN BOOSTERS

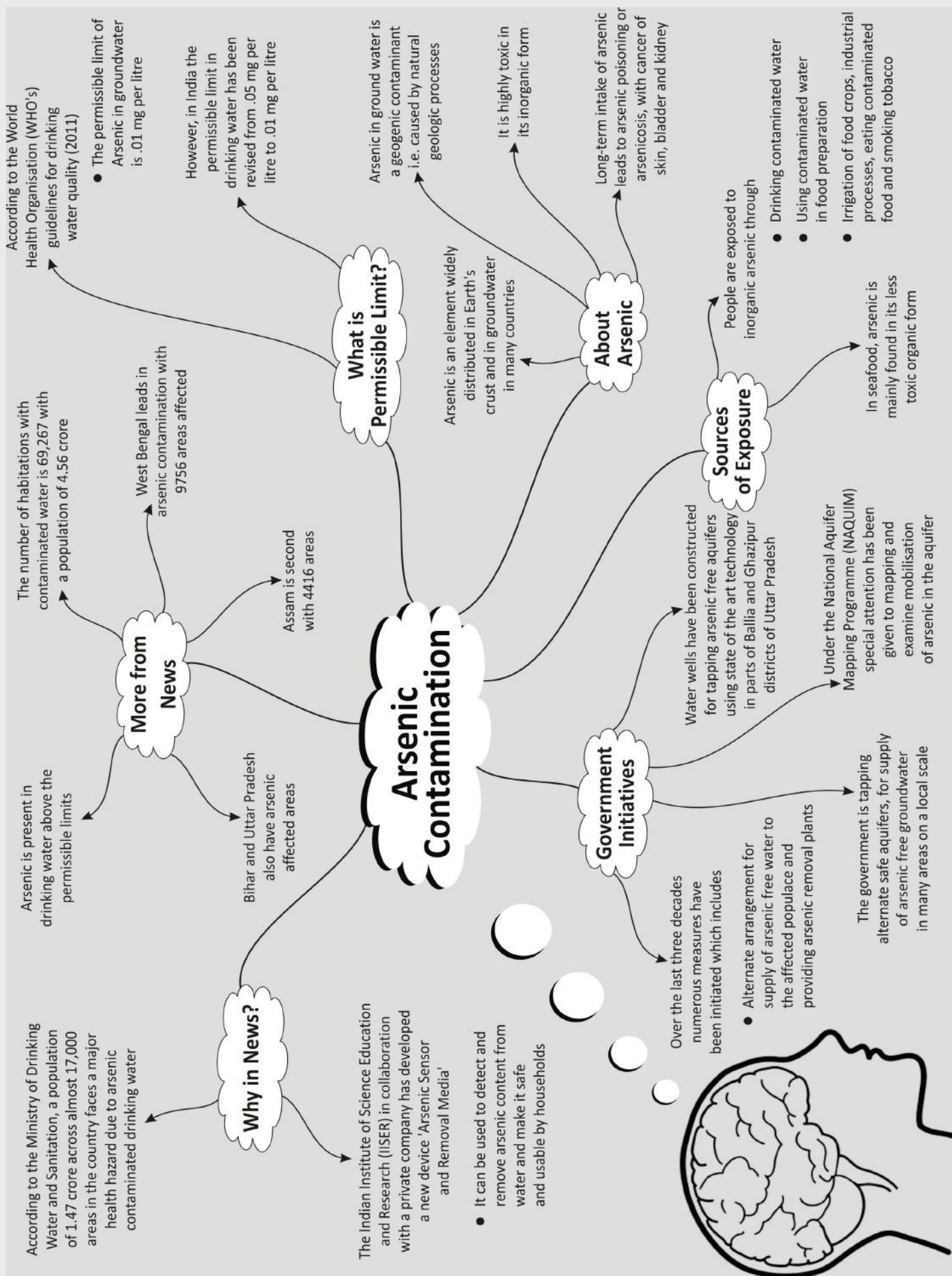


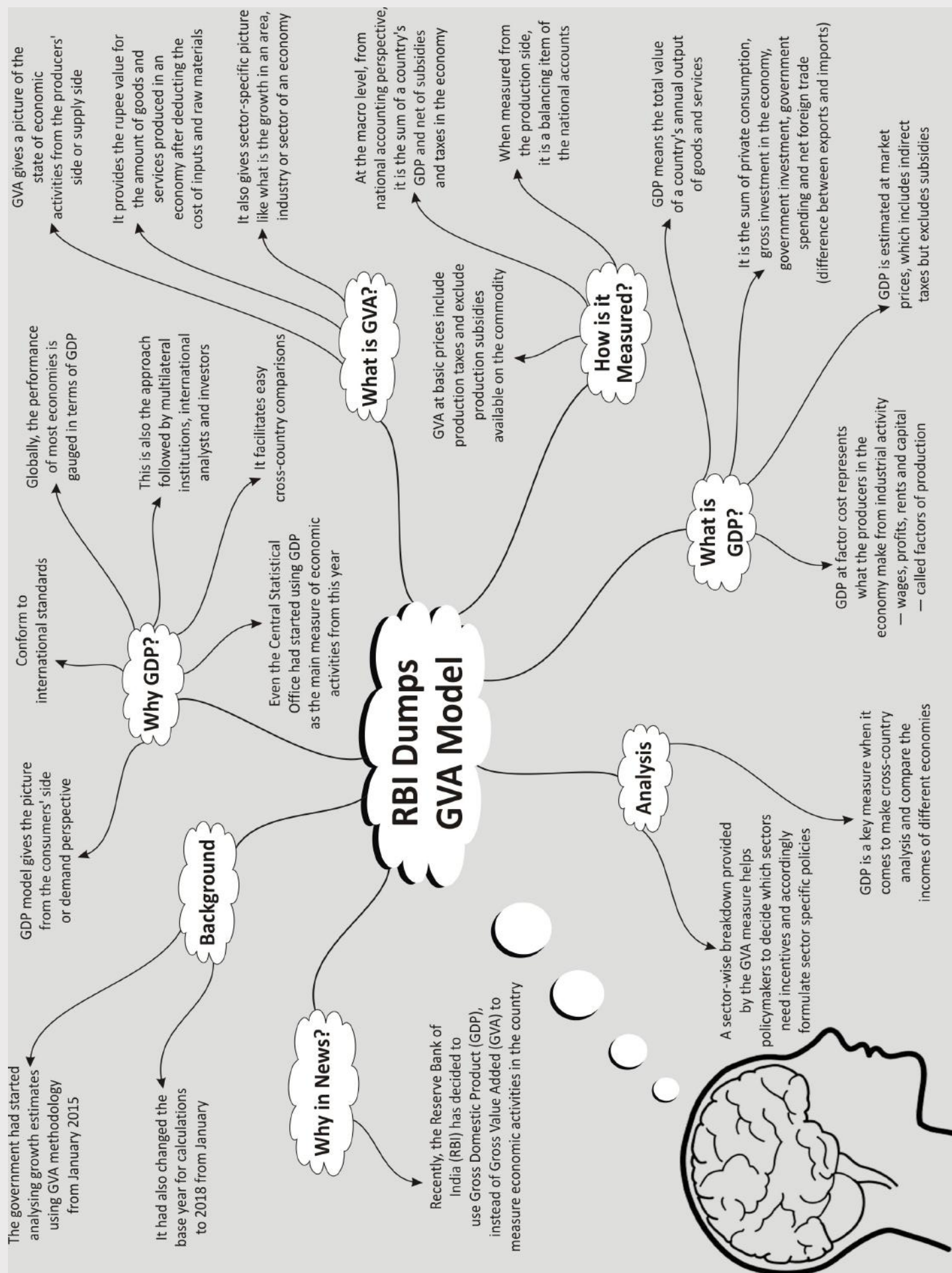












SEVEN MCQ's WITH EXPLANATORY ANSWERS

(Based on Brain Boosters)

Trade Facilitation Pact in Services

Q1. With reference to the 'Trade Facilitation Pact in Services', consider the following statements:

1. It was proposed by India at WTO meeting in 2016, to ease global service trade.
2. It would set provisions on all four modes of services supply of the General Agreement on Trade in Services (GATS).

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. WTO members discussed a new proposal by India for an agreement at the WTO's Working Party on Domestic Regulation (WPDR) Meeting in October 2016, to ease global services trade, with the aim of reducing bottlenecks that services and services suppliers face. The motivation behind the proposal came from the increasing share of services in domestic and international transactions, but the continued lag in the volume of trade.

The proposed agreement would set provisions on all four modes of services supply of the General Agreement on Trade in Services (GATS). For services supplied through "mode 3" (a foreign company setting up subsidiaries or branches to provide services in another country), it suggests streamlining the setting up of businesses through a "single window". For the cross-border movement of services suppliers (known as "mode 4"), it suggests simplifying work permit and visa procedures and ensuring that measures relating to taxation, fees and social security contributions do not unfairly disadvantage foreign service suppliers.

National Wind-solar Hybrid Policy

Q2. Consider the following statements in respect of newly drafted 'National Wind-solar Hybrid Policy':

1. The objective of the policy is to provide a framework for promotion of large grid connected wind-solar Photovoltaics (PV) hybrid system for efficient utilization of infrastructure including land and transmission system.

2. The policy seeks to promote new hybrid projects as well as hybridisation of existing wind/solar projects.

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 main objective of the policy is to provide a framework for promotion of large grid connected wind-solar PV hybrid system for optimal and efficient utilization of transmission infrastructure and land, reducing the variability in renewable power generation and achieving better grid stability.

The policy seeks to promote new hybrid projects as well as hybridisation of existing wind/solar projects. The existing wind/solar projects can be hybridised with higher transmission capacity than the sanctioned one, subject to availability of margin in the existing transmission capacity.

CIPAM

Q3. With reference to the 'National Intellectual Property Rights Policy', consider the following statements:

1. The new policy is in compliance with Doha Development Agenda and TRIPS (Trade Related aspects of IPRs).
2. Department of Industrial Policy and Promotion is the nodal agency for regulating intellectual property rights in India.

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 new policy was announced in May 2016. The first and foremost objective of the policy is "IPR Awareness: Outreach and Promotion". The policy which is in compliance with WTO's (World Trade Organisation) agreement on TRIPS (Trade Related aspects of IPRs) and Doha Development Agenda.

It suggests making the Department of Industrial Policy and Promotion (DIPP) the nodal agency for all IPR issues. Copyrights related issues will also come under DIPP's ambit from that of the Human Resource Development (HRD) Ministry.

GSDP

Q4. Consider the following statements in respect of 'Green Skill Development Programme':

1. Ministry of Skill Development and Entrepreneurship is the nodal agency for regulation and implementation of the programme.
2. It aims to create over five lakh job opportunities by 2021 through green skills.

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. Realizing the need for developing the green skills, the Ministry of Environment, Forest & Climate Change (MoEF&CC) launched the pilot project of Green Skill Development Programme(GSDP) in June, 2017. After a successful pilot under which 248 people received training, the government is now expanding the programme to an all-India level.

Statement 2 is correct. Around 560,000 people will be taught "green skills" such as pollution monitoring, wildlife management and mangrove conservation during the next three years. The programme will also include more green skills now.

ToR of the 15th FC

Q5. The term 'Terms of Reference of 15th Finance Commission' is sometimes seen in the news. Consider the following statements in this regard:

1. One of the Terms of reference (ToR) of the 15th Finance commission is to use the 2011 Census to calculate population for allocation of Union tax revenue in place of 1971 Census.
2. As the Finance Commission is a constitutional body, its recommendations are binding on the government.

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. One of the Terms of reference (ToR) of the 15th Finance commission is to use the 2011 Census to calculate population for allocation of Union tax revenue in place of 1971 Census among others such as review the increased tax devolution of the 14th FC and conditions on state borrowings etc.

Statement 2 is not correct because the recommendations made by Finance Commission are only of advisory nature and hence, not binding on government.

Arsenic Contamination

Q6. With reference to the arsenic contamination of ground water, consider the following statements:

1. In India the permissible limit of arsenic in drinking water is .05 mg per litre.
2. Arsenic is highly toxic in its inorganic form.

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. According to the WHO's guidelines for drinking water quality (2011), the permissible limit of Arsenic in groundwater is .01 mg per litre. However, in India the permissible limit in drinking water has been revised from .05 mg per litre to .01 mg per litre.

Statement 2 is correct. Arsenic is a natural component of the earth's crust and is widely distributed throughout the environment in the air, water and land. It is highly toxic in its inorganic form. In seafood, arsenic is mainly found in its less toxic organic form.

RBI Dumps GVA Model

Q7. Consider the following statements:

1. Gross Value Added method gives the picture from the consumers' side or demand perspective.
2. Gross Domestic Product model gives a picture of the state of economic activity from the producers' side or supply side.

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: (d)

Explanation: Both statements are not correct. Gross Value Added (GVA) model gives a picture of the state of economic activity from the producers' side or supply side and the Gross Domestic Product (GDP) model gives the picture from the consumers' side or demand perspective.

A sector-wise breakdown provided by the GVA measure helps policymakers decide which sectors need incentives or stimulus and accordingly formulate sector specific policies. But GDP is a key measure when it comes to making cross-country analysis and comparing the incomes of different economies.



SEVEN IMPORTANT FACTS FOR PRELIMS

1. The first-ever all-woman Post Office Passport Seva Kendra (POPSK) has begun operations, in which city?

–Phagwara (Punjab)

2. Which state has launched a free treatment scheme for road accident victims?

–Gujarat

3. Who was honoured with the DRDO Lifetime Achievement Award 2017?

–V. K. Saraswat

4. Which state government would be setting up a panel to check security expenditure?

–Punjab

5. Which nation has become the second nation to move its embassy in Israel to Jerusalem?

–Guatemala

6. Which Indian personality was honoured with the 2018 Nikkei Asia Prize in Japan?

–Bindeshwar Pathak

7. India and Nepal started a direct bus service between which two places?

–Janakpur and Ayodhya

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SEVEN PERFECT QUOTES

(IMPORTANT FOR ESSAY AND ANSWER WRITING)

"Patience is bitter, but its fruit is sweet."

–Aristotle

"Every man takes the limits of his own field of vision for the limits of the world."

–Arthur Schopenhauer

"Life should be great rather than long."

–B. R. Ambedkar

"You may delay but time will not."

–Benjamin Franklin

"Don't adjust the goals, adjust the action steps."

–Confucius

"Try not to become a man of success. Rather become a man of value."

–Einstein

"Every morning we are born again. What we do today is what matters most."

–Gautam Buddha

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SEVEN PRACTICE QUESTIONS FOR MAIN EXAM

Answer each of the following questions in 200 words:

- Q1. Whenever the case of a hung Assembly and the subsequent exercise of government formation, came up, the Bommai case would be cited, making it one of the most quoted verdicts in the country's political history. Discuss its verdict and its implications.
- Q2. Special Economic Zones (SEZs) in India have not been as successful as their counterparts in many other countries. Discuss how the current policy of integrating existing coastal SEZs into the overarching plan of coastal development under 'Sagarmala' can lead to a turnaround for SEZs.
- Q3. Assam has been on edge over the settlement of persons from neighbouring countries. Did partition and its legacy create permanent fissures in the composite Assamese identity? Discuss.
- Q4. Artificial intelligence (AI) has the potential to address shortfalls in the healthcare industry. Discuss why India must make collaborative efforts to unlock the potential of AI to create an enabling health technology ecosystem to match demand, optimise costs and demonstrate value.
- Q5. The United States (US) submitted a document in the World Trading Organization (WTO) questioning the compatibility of India's agricultural subsidies with the relevant provisions of the Agreement on Agriculture (AoA). What does it mean for India? Critically examine the provisions of Agreement on Agriculture relating to subsidies.
- Q6. What are post-poll alliances? Critically discuss whether creation of post-poll alliances is in line with the spirit of democracy.
- Q7. Discuss the contribution of Karl Marx to the field of economics, sociology and moral philosophy.

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