

**VISIONIAS**

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Classroom Study Material

**MAY - JUNE 2016**

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## ADVANCED COURSE *for* GS MAINS

Targeted towards those students who are aware of the basics but want to improve their understanding of complex topics, inter-linkages among them, & analytical ability to tackle the problems posed by the Mains examination.

*Starts: 23<sup>rd</sup> August*  
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# 1. POLITY AND GOVERNANCE



## 1.1. UJALA SCHEME


Recently, **Unnat Jyoti by Affordable LEDs for All (UJALA)** was launched.

### Objective

The main objective is to **promote efficient lighting, enhance awareness** on using efficient equipment, which reduce electricity bills and help preserve environment.

### Key Highlights

- The scheme is being monitored in a transparent manner through a national dashboard ([www.delp.in](http://www.delp.in)).
- EESL has distributed over 10 crore LED bulbs under UJALA programme.
- **Over 13** State governments have voluntarily adopted this scheme.
- The bulbs will be distributed through special counters set up at designated places in the city.
- The Electricity Distribution Company and Energy Efficiency Services Limited (EESL), a joint venture public sector body of Govt., are implementing the programme.

 <b>BRIGHT DAYS AHEAD</b>	Programme aims to improve energy efficiency and reduce power consumption of the State
	To benefit consumers as their energy bills will come down substantially
About 47 lakh domestic and 3 lakh commercial consumers will benefit from this programme	Commercial consumers can avail up to 20 bulbs
	Government to supply a nine Watt LED bulb at a subsidised rate of ₹85 with three years guarantee
EACH DOMESTIC CONSUMER TO BE PROVIDED UP TO 10 LED BULBS OF NINE WATT EACH	

### Targets of the scheme

- Overall target of number of incandescent bulbs to be replaced - **200 million**
- Expected overall annual energy savings - **10.5 billion KWh**
- Expected reduction of load - **5000 MW**
- Expected annual cost reduction of consumer bills - **Rs. 40,000 crore**
- Annual estimated greenhouse gas emission reductions - **79 million tonnes of**

## 1.2. REHABILITATION OF BONDED LABORER SCHEME

### Why in news?

- The Centre is revising the rehabilitation of bonded labour scheme, bringing it into the Central sector.

- **Bonded labor** is a person's pledge of their labor or services as security for the repayment for a debt or other obligation.
- The BLS(A) Act, 1976 for the last 40 years has not been able to eradicate Bonded Labour System completely.

### Central Sector and Centrally Sponsored Schemes

- Under **Central sector schemes**, it is 100% funded by the Union government and implemented by the Central Government machinery.
- Central sector schemes are mainly formulated on subjects from the **Union List**.
- Under **Centrally Sponsored Scheme (CSS)** a certain percentage of the funding is borne by the States in the ratio of 50:50, 70:30, 75:25 or 90:10 and the implementation is by the State Governments.
- Centrally Sponsored Schemes are formulated in subjects from the State List to encourage States to prioritize in areas that require more attention.
- Funds are routed either through consolidated fund of States or are transferred directly to State/ District Level Autonomous Bodies/Implementing Agencies.

- As per the Bajjal Committee Report, 1987, CSS have been defined as the schemes that are funded directly by Central Ministries/Departments and implemented by States or their agencies, irrespective of their pattern of financing, unless they fall under Centre's sphere of responsibility i.e., Union List.



### 1.3. MINES AND MINERALS AMENDMENT BILL 2016

#### Why in news?

- The Mines and Minerals (Development and Regulation) Amendment Bill, 2016 has been approved both by the Lok Sabha and Rajya Sabha.
- Auction of non-coal mines was introduced in the new mining law amended in 2015. Before 2015, mines were handed out by state governments on discretion.

#### Key amendments

- The Bill amends the Mines and Minerals (Development and Regulation) Act, 1957 which regulates the mining sector in India & specifies the requirement for obtaining and granting leases for mining operations
- Transfer of mining leases - It includes the provisions of allowing transfer of captive mines granted through procedures other than auction.
- Defined Leased area - as the area within which mining operations including certain defined activities in non-mineralized area.

#### Benefits

- It will allow for merger and acquisition of companies with captive mining leases acquired without auction.
- Acquiring companies will have raw material security through mines belonging to the acquired companies.
- **Benefits to banks:** It can liquidate stressed assets where a firm or its captive mining lease is mortgaged.

#### EASY ACCESS

● **Now:** MMDR Act allows transfer of leases where the mine has been acquired through auction

● **After amendment:** Transfer of leases also allowed for those mines that have been allocated

**Who will benefit:** Mergers and acquisitions of companies will be easier

● Banks and financial institutions can liquidate stressed assets where a captive lease is mortgaged

### 1.4. UNIVERSITY GRANTS COMMISSION (UGC)

#### Why in News?

Recently, Subramanian committee recommended that the UGC Act should be allowed to lapse and replaced by a new National Higher Education Act.

- Statutory body setup by Union govt. in as per UGC Act 1956 under HRD Ministry.
- The three primary functions of UGC include
  - ✓ Overseeing distribution of grants to universities and colleges in India.
  - ✓ Providing scholarships/fellowships to beneficiaries, and
  - ✓ Monitoring conformity to its regulations by universities and colleges.

### 1.5. CONSUMER DISPUTES REDRESSAL COMMISSION

#### Why in News?

The National Consumer Disputes Redressal Commission ordered a hospital in Mumbai to pay Rs 12,000 to a patient who contracted HIV 20 years ago after blood transfusion.

#### About NCDRC

- It is a quasi-judicial commission set up in 1988 under the **Consumer Protection Act of 1986**.
- The commission is headed by a sitting or retired judge of the Supreme Court of India.





- Section 21 of Consumer Protection Act, 1986 posits that the National Consumer shall have jurisdiction:
  - ✓ To entertain a complaint valued more than one crore.
  - ✓ It also has Appellate and Revisional jurisdiction from the orders of State Commissions or the District fora as the case may be.
- Section 23 of the Act provides that person aggrieved by an order of NCDRC, may Appeal to Supreme Court of India within a period of 30 days.

### **The Consumer Protection Act, 1986**

- It is a benevolent social legislation that lays down the rights of the consumers and provides for promotion and protection of the rights of the consumers.
- The Act mandates establishment of Consumer Protection Councils at the Centre as well as in each State and District, with a view to promoting consumer awareness.
- The Central Council is headed by Union Minister In-charge of the Dept. of Consumer Affairs and the State Councils by the Minister In-charge of the Consumer Affairs in the State Governments.
- It also provides for a 3-tier structure of the National and State Commissions and District Forums for speedy resolution of consumer disputes.

## **1.6. SWACHH YUG CAMPAIGN**

- As part of its efforts to make villages located along Ganga open defecation-free, Government has launched a campaign 'Swachh Yug'.
- It is a collaborative effort of three Union Ministries, to bring about behavioural change among people staying in villages along the river.
- There are 5,169 villages located along Ganga falling under 1,651 gram panchayats in 52 districts of five states - UP, Uttarakhand, Bihar, Jharkhand and West Bengal from where the river flows.
- A nodal officer has been identified for each district to work on making area under their jurisdiction open defecation free (ODF) in a "mission mode" and clean through proper solid and liquid waste management.
- In addition to monetary incentive offered under Swachh Bharat Mission, extensive interpersonal behaviour change communication training will be given to local trainers through network of virtual classrooms.

### **Ministries involved in campaign**

- The Ministry of Drinking Water and Sanitation – mission mode strategy to focus on cleanliness of village through proper solid and liquid waste management.
- Ministry of Youth Affairs and Sports under the coordination of the Nehru Yuva Kendra Sangathan, will enlist support of youth agencies like Bharat Scouts and Guides, Nehru Yuva Kendras and National Service Scheme.
- Ministry of Water Resources, River Development and Ganga Rejuvenation

## **1.7. PRESIDENT REJECTS BILLS PASSED BY MANIPUR**

### **Why in news?**

- Recently, President returned three bills the Manipur Assembly had passed on August 31, 2015.
- Since last year Manipur has been experiencing various forms of agitations in connection with these bills.
- The contentious bills are the Manipur Land Reforms and Land Revenue (7th Amendment) Bill, 2015, the Manipur Shops and Establishment (2nd Amendment) Bill, 2015 and the Manipur Protection of Peoples Bill, 2015.

- Experts will now re-examine the first two bills for a “reasonable conclusion” and for the third bill will be re-examine it for a “new legislation taking into consideration all aspects of the hill and valley people of Manipur.”



## 1.8. PARLIAMENTARY SECRETARY ISSUE IN DELHI

### Why in News?

President has refused to give his consent to the amendment to the Delhi Members of Legislative Assembly (Removal of Disqualification) Act, 1997, to exempt the post of Parliamentary Secretary from the purview of ‘office-of-profit’.

### Constitutional Provisions

- Under **Article 102(1)(a) and Article 191(1)(a)** of the Constitution, a person shall be disqualified as a member of Parliament or of a Legislative Assembly/Council if he holds an “Office of Profit” under the central or any state government (other than an office declared not to disqualify its holder by a law passed by the Parliament or state legislature).
- Parliamentary Secretary’s post is also in contradiction to **Article 164 (1A)** of the Constitution which provides for limiting the number of Ministers in the State Cabinets to 15 per cent of the total number of members of the State Legislative Assembly because a Parliament Secretary holds the rank of Minister of State. (The limit is 10% for Delhi, owing to its special status)

### Definition of Office of Profit

‘Office of profit’ is not defined in the Constitution. However, based on past judgments, the Election Commission has noted five below **tests** for what constitutes an office of profit:

- Whether the government makes the appointment
- Whether government has the right to remove or dismiss the holder.
- Whether the government pays remuneration.
- What the functions of the holder are.
- Does the government exercise any control over the performance of these functions.

## 1.9. NEW PRINT MEDIA ADVERTISEMENT POLICY

### Why in News?

Ministry of Information & Broadcasting has framed a New Print Media Advertisement Policy for Directorate of Advertising & Visual Publicity (DAVP) with the objective to promote transparency and accountability in issuing of advertisements in print media.

### Key Highlights of the New Policy

- For the first time the policy introduces a New Marking System for newspapers to incentivize Newspapers who have better professional standing.
- It includes **circulation verification Procedure** for empanelment of Newspapers/ Journals with DAVP.
- The policy also stipulates the empanelment procedure for **Multi-Editions of a newspaper**.
- To promote equity based regional outreach, the policy emphasizes that the budget for all India release of advertisements shall be divided among states based on total circulation of newspapers in each State /Language.

## 1.10. SC PANEL TO MONITOR MCI

### Why in News?

- Agreeing with the view of Parliamentary Standing Committee report of March 2016, the Supreme Court has **used its rare and extraordinary powers under the Constitution (A.142)** to set up a **three-member committee**.
- Committee will be **headed by former Chief Justice of India R.M. Lodha**, to oversee the functioning of the Medical Council of India (MCI) for at least a year.



### Article 142 of Indian Constitution

- It empowers the Supreme Court to pass such decree or order as may be necessary for doing complete justice in any cause or matter that is pending before it.
- The Supreme Court can make use of the powers granted to it under the article 142 in cases wherein the existing provisions of the law are inadequate to deal with the issue at hand and do adequate justice.
- The article, however, does not lay down any limitations regarding the causes or the circumstances in which the power is to be exercised.
- Also, the decision to exercise this power has been left completely to the discretion of the Supreme Court.

## 1.11. SPECIFIC RELIEF ACT

### Why in News?

- A Central government-appointed expert committee has submitted its report recommending changes to the Specific Relief Act 1963.

### Committee Recommendations

- The committee has recommended **for specific performance to be made the rule and not an exception**.
- This would mean that even if contractual obligations cannot be met, the court could ask the parties to fulfill terms of the contract. Monetary compensation will be an alternative when contracts cannot be fulfilled.
- It has also suggested guidelines to the courts for exercising discretion in these matters, in order to streamline how courts interpret the provisions.
- It said that there was need to see whether intervention of courts in public works should be minimal

### What is Specific Relief Act?

- As per the act, in an event where actual damage for not performing the contract cannot be measured or monetary compensation is not adequate, one party can ask the court to direct the other party to fulfill the requirements of contract.
- **This is called specific performance of a contract.**
- This extends to infrastructure contracts, like construction of housing societies or sale and purchase of land.

## 1.12. ELECTORAL REFORMS

- The Election Commission of India sought to amend RPA to include specific powers to **postpone polls** on the grounds of use of money power.
- At present, there is no specific provision in the law to this effect and commission has to resort to extraordinary powers under Article 324 of constitution which, it feels should be used sparingly.
- Clause 58 A empowers the Election Commission to cancel polls only if there is an evidence of booth-capturing or use of muscle power.
- Thus, EC seeks a new clause **'58 B' in the Act** for dealing with use of money power in elections or amendment to this effect in the existing clause '58A'.

## 1.13. FREEBIES IN ELECTION



- In recent times, various parties are promising freebies in their election manifesto like free laptops, education loan waiver, free water supplies etc.
- It led Supreme Court to intervene in 2013 and ask the Election Commission to frame guidelines regarding what political parties can promise in manifestos.

Election commission has added **Section 8 in Model Code of Conduct, which** says:

- Election manifesto should not contain anything against ideals of constitution and should be consistent with the spirit of the Model code of conduct.
- In the interest of transparency, level-playing field and credibility of promises, it is expected that manifestos also reflect the rationale indicate the ways and means to meet the financial requirements.
- Trust of voters should be sought only on those promises which are possible to be fulfilled.

### 1.14. REVIEW OF NO DETENTION POLICY UNDER RTE

#### Why in news?

- In reply to HRD ministry, at least 18 state Govts want this section to be repealed.
- Recently, T S R Subramanian panel appointed to suggest Education policy also recommended that Govt. should bring back the pass-fail system from Class VI.
- Rajasthan and Delhi have also passed Bills to reverse the no-detention policy. These are waiting for the governor's assent.

#### What is No Detention Policy?

- As per Section 16 of RTE Act, students up to class 8 are automatically promoted to the next class without being held back even if they do not get a passing grade.
- This has been implemented as part of the **Continuous and Comprehensive Evaluation (CCE)** under the Act to ensure all-round development of students.

### 1.15. AMENDMENT TO PREVENTION OF CORRUPTION ACT (PCA), 1988

#### Why in news?

- The Union Cabinet gave its approval to amend the Prevention of Corruption Act, 1988 by pursuing the Prevention of Corruption (Amendment) Bill, 2013 which was pending before the Rajya Sabha.
- The Prevention of Corruption Act, 1988 was enacted in the year 1988.
- Later developments, such as India ratifying the UNCAC, international practice on treatment of the offence of bribery and corruption, etc. necessitated a review of the existing provisions of the Act.

#### Proposed Amendments

The proposed amendments would fill in perceived gaps in the domestic anti-corruption law and also help in meeting the country's obligations under the **United Nations Convention against Corruption (UNCAC)** more effectively.

- Providing for more stringent punishment for the offences of bribery, both for the bribe giver and the bribe taker.
- Penal provisions being enhanced from **minimum** 6 months to **3 years** and from **maximum** 5 years to **7 years**. The 7 year imprisonment brings corruption to the **heinous crime category**.



- To contain gain of benefits from profits of corruption, the powers of attachment are proposed to be conferred upon the trial Court (Special Judge) instead of the District Court.
- Expanding the ambit of provision for containing inducement of public servant from individuals to commercial entities to contain supply side of corruption.
- Providing for issue of guidelines for commercial organizations to prevent persons associated with them from bribing a public servant.
- The average trial period of cases under PC Act in the last 4 years has been above 8 years. It is proposed **to ensure a trial completion within 2 years.**
- Intentional enriching by public servants will be construed as criminal misconduct and possession of disproportionate assets as proof of such illicit enrichment.
- **Non-monetary gratification** has been covered within the definition of the word gratification.
- By way of explanation 2 to section 7(2), the obligation of a public servant has been explicitly delineated such that the public servant deters from violating a statutory duty or any set of rules, government policies, executive instructions and procedures.

## 1.16. CONVERTING CENSUS TOWNS TO ULBS

### Why in news?

Ministry of Urban Development has asked 28 States to convert all 3,784 Census Towns into statutory Urban Local Bodies.

### What is census town?

A Census Town is an area with urban characteristics such as

- Minimum population of 5,000.
- At least 75% of the male main working force engaged in non-agricultural activities.
- Population density of at least 400 persons per sq.km.

As per 2011 Census, there are 3,784 Census Towns as against 1,362 in 2001.

### What are statutory ULBs?

- A Statutory urban local body (ULB) is one with a municipality, corporation, cantonment board or notified town area committee.
- As per 2011 Census, there are 4,041 such towns as against 3,799 in 2001.

### Need to convert

- To promote planned urban development.
- It leads to enhanced revenues and efficient delivery of services to citizens leading to economic growth.
- They become entitled to central assistance as per guidelines of 14<sup>th</sup> Finance commission.
- Under AMRUT mission, 50% weightage is given to the number of statutory towns in any State/UT for allocation of funds among them.

## 1.17. RIGHT TO SAFE WATER

- The Union Ministry of Water Resources has recently released two draft legislations that regulate the extraction of groundwater and ensures safe drinking water to all.
- The Bills are called the National Water Framework Bill and the Model Bill for Conservation, Regulation and Management of Groundwater.

### National Water Framework Bill

- The Bills promises everyone the minimum amount of “safe water” while making the state obliged to protect and conserve water.
- Every person would be entitled to “water for life” that shall not be denied on the ground of inability to pay.



- It defines “water for life” as basic requirement that is necessary for the “fundamental right of life of each human being, including drinking, cooking, bathing, sanitation, personal hygiene and related personal and domestic uses”.
- The minimum water requirement would be determined by appropriate governments from time to time.
- The Bill is being proposed as a model legislation that can be adopted by states as water is a state subject.
- A binding national water quality standards for every kind of use is proposed to be introduced.
- A binding national water footprint standards for every activity or product are also sought to be evolved.

#### **Model Bill for Conservation, Regulation and Management of Groundwater**

- The Bill seeks to do away with the British Common Law concept, that those owning the land can extract unlimited groundwater.
- The bill proposes fines between Rs 5000 and 5 lakh depending on the level of infraction and who the perpetrators are.
- Groundwater will not be a free resource and even those who can pay for it need to ensure it is equitably available for all.
- The industries extracting groundwater have to submit plans to ensure that water is being used responsibly and any possible contamination is remedied.
- Top priority in the use of groundwater should be in drinking, sanitation, food security, sustenance agriculture, needs of women and only after that industry.
- There would be an incentive for those who cultivate less water-intensive crops.
- There would also be groundwater security boards and groundwater protection zones that would be overseen by State bodies.
- The bill aims to decentralise water management and gives more power to panchayats and gram sabhas to decide how water can be better used.

### **1.18. JALRAHAT EXERCISE**

- Exercise jalrahat is a **joint initiative taken by the Assam state government and Armed forces towards improving disaster preparedness during floods.**
- **Need:** Over a million people have been affected by floods in Assam. Almost 40% of the total area in the state is flood-prone.
- It is based on the guidelines under National Disaster Management Plan 2016, which calls for enhancing the cooperation and involvement of armed forces in disaster mitigation.
- The army can be suitable involved at all stages of disaster management from Preparation, Planning, Early Warning and Response to Relief and Rehabilitation.
- Similar exercises will be done in
  - ✓ Vishakhapatnam by Indian Navy- **Exercise Prakampana** for preparedness in case of super cyclone
  - ✓ Bhuj, Gujarat by Indian Air Force- **Exercise Sahayata** for major earthquake.

## 2. IR/INDIA AND WORLD



### 2.1. INDIA-USA

Prime Minister Modi paid fourth official visit to USA.

#### Highlights of Joint statement

	What India gave	What India got
<b>Climate and Energy</b>	Work towards an HFC amendment in 2016 “with an ambitious phasedown schedule” under the <b>Montreal Protocol</b> pursuant to the Dubai Pathway	US to pursue membership of the <b>International Solar Alliance (ISA)</b>
	Pursue negotiations at the <b>International Civil Aviation Organization Assembly</b> to reach a “successful outcome” to address greenhouse gas emissions from international aviation.	<b>Six AP 1000 reactors to be built by Westinghouse</b> ; India and the U.S. Export-Import Bank to work together toward a competitive financing package for the project.
	Announcement of a \$20 million <b>US-India Clean Energy Finance (USICEF)</b> initiative, supported equally by both countries.	
	\$40 million <b>U.S.-India Catalytic Solar Finance Program</b> , also supported equally.	
<b>Export Control and Defence Cooperation</b>	US to designate India as a “ <b>major defence partner.</b> ”	US re-affirmed support for India’s entry into the NSG, the Missile Technologies Control Group, the Australia Group and Wassenaar Arrangement
	Text of the Logistics Exchange Memorandum of Agreement “finalised.”	US welcomed India’s offer to host the Summit on Countering Weapons of Mass Destruction Terrorism
	The U.S.-India Joint Strategic Vision for the Asia-Pacific and Indian Ocean Region would be the guide for collaboration in years to come.	India to receive license-free access to a “wide range of dual-use technologies”, but in accordance with US law
<b>Cyber</b>	A “commitment” to promote the free flow of information.	Closer cooperation among agencies to combat cybercrime
	India supports norm against conducting or supporting ICT-enabled theft of IP, including trade secrets/other confidential business info for commercial purposes.	US commits to strengthen “critical Internet infrastructure” in India.
	Greater cooperation on cyber security standards and security testing.	Norm to tackle malicious cyber activity emanating from one’s territory
<b>Counter-terrorism</b>		iteration of Pakistan’s responsibility to bring perpetrators of the 2008 Mumbai and [for the first time] 2016 Pathankot attacks to justice
		US re-affirmed its support for a UN Comprehensive Convention on International Terrorism.
<b>Trade</b>	Work towards concrete progress on IPR issues and enhance bilateral cooperation among the “drivers of innovation” in both countries.	

## 2.2. INDIA AND IRAN

### Chabahar port agreement

India and Iran signed the “historic” Chabahar port agreement

- A contract for the development and operation for 10 years of two terminals and five berths.
- MoU on provision of services by Indian Railways, including financing to the tune of \$1.6 billion, for the Chabahar-Zahedan railway line — also part of the trilateral agreement between India, Iran and Afghanistan on a transit and trade corridor.
- India will invest in setting up industries —from aluminium to urea plants — in **Chabahar free trade zone**



### Economic significance of Port

- Once it is developed, Indian ships will get direct access to the Iranian coast; a rail line to the Afghan border town of Zaranj will allow a route around Pakistan.
- The Zaranj-Delaram road constructed by India in 2009 can give access to Garland Highway, setting up access to 4 major cities in Afghanistan — Herat, Kandahar, Kabul and Mazar-e-Sharif.
- Goods from India will travel up to Afghanistan and beyond, along the yet-to-be developed International North-South Transport Corridor (INSTC) to Central Asia.

### Strategic significance

- Chabahar is situated just 100 km from Pakistan’s Gwadar port, the centrepiece of a \$46 billion economic corridor that China is building.

### The trilateral trade treaty

- India, Afghanistan and Iran signed the trilateral trade treaty for developing the port.

## 2.3. INDIA AND PHILIPPINES

Kolkata-based public sector yard Garden Reach Ship Builders (GRSE) has emerged as the lowest bidder to supply two warships to the Philippines Navy. GRSE has offered the Kamorta class Anti-Submarine Warfare (ASW) ships.

- India exported its first warship to Mauritius in December 2014, an offshore patrol vessel.
- It is also set to supply 4 patrol vessels to Vietnam under \$100 million line of credit extended by India in 2014.

## 2.4. CONFERENCE ON INTERACTION AND CONFIDENCE BUILDING MEASURES IN ASIA (CICA)

- It is an inter-governmental forum for enhancing cooperation towards promoting peace, security and stability in Asia.
- CICA, which has 26 members including India, was formed based on a proposal by Kazakhstan President Nursultan Nazarbayev in 1992 to further inter government consultations.
- Fifth foreign ministers’ meeting of the Conference was held in Beijing, China.
- During the conference Chinese president unveiled security doctrine to counter U.S. ‘pivot’
- China has invited Asian countries to join Beijing in framing a security governance model with “Asian features” to counter the U.S. ‘rebalance’ to the region.





### Maritime dispute

- Washington has dubbed the growing Chinese assertion as a danger to “**freedom of navigation**” which could hamper the \$5.3 trillion trade passing through the South China Sea.
- China has objected **outside powers, or internationalisation**, for resolving differences among Asian countries
- The Chinese side has repeatedly slammed Manila’s decision to petition the Permanent Court of Arbitration in The Hague to settle its maritime claims with Beijing.

## 2.5. RESPONSIBILITY TO PROTECT (R2P)

R2P or RtoP is a global political commitment endorsed by all member states of the United Nations at 2005 World Summit to prevent genocide, war crimes, ethnic cleansing and crimes against humanity.

### Pillars of R2P

The three pillars of the responsibility to protect, as stipulated in the Outcome Document of the 2005 United Nations World Summit and formulated in the Secretary-General's 2009 Report on Implementing the Responsibility to Protect are

- The State carries the primary responsibility for protecting populations from genocide, war crimes, crimes against humanity and ethnic cleansing, and their incitement;
- The international community has a responsibility to encourage and assist States in fulfilling this responsibility;
- Also, it has a responsibility to use appropriate diplomatic, humanitarian and other means to protect populations from these crimes.
- If a State is manifestly failing to protect its populations, the international community must be prepared to take collective action, in accordance with the Charter of the United Nations.

## 2.6. NUCLEAR SUPPLIERS GROUP (NSG)

Nuclear Suppliers Group (NSG) is a multinational body concerned with reducing nuclear proliferation by controlling the export and re-transfer of materials that may be applicable to nuclear weapon development and by improving safeguards and protection on existing materials.

- The NSG was founded in response to the Indian nuclear test in May 1974 and first met in November 1975.
- As of 2014 the NSG has 48 members.
- India got an exemption from the NSG for **nuclear imports in 2008**, following the civil nuclear deal with the U.S., despite not being a signatory to the NPT
- As the 48-member **NSG works by consensus**, not majority, India is reaching out to every possible country, much like the push at the UNGA for reforms.
- Four UN member states have never joined the NPT: **India, Israel, Pakistan and South Sudan**.

## 2.7. INDIA-AFRICA

President paid visit to 3 African nations - Ghana, Cote d’Ivoire and Namibia.

### A. India-Ivory Coast

India had established its Embassy in Abidjan in 1979, while Cote d’Ivoire (also called as Ivory Coast) opened its Resident Mission here in 2004.



- President Mukherjee has been accorded the country's **highest honour, Grand Cross National Order**.
- Inked an agreement to re-establish the headquarters of the **Exim Bank in Abidjan**.
- Cote D'Ivoire, the **world's largest producer of cocoa**, sought investment from India's private sector.
- It is the biggest exporter of **cashew nuts** to India, which procures nearly 80% of its cashew nuts exports.

### B. India-Ghana

Ghana has sought India's civil nuclear cooperation to explore the possibilities of reducing its dependence on traditional energy sources to cut costs and focus on cleaner environment.

- India is the largest foreign investor in Ghana, with more than 700 projects.
- India would establish a Chair on Indian Studies in the University of Ghana, Accra. It will be funded by the Indian Council for Cultural Relations (ICCR).
- India is supporting many major socio-economic projects such as Komenda Sugar Plant and Elmina Fish Processing Plant by way of grants and Lines of credit.

### C. India-Namibia

- Namibia signed an agreement with India in 2009 for uranium supply. However, as a member of the **African Nuclear Weapon-Free Zone Treaty (ANWFZT)**, it is barred from trading in uranium with India, which is **not a signatory of NPT**.
- Namibia is the fourth largest producer of uranium.
- The ANWFZT, also known as the **Treaty of Pelindaba**, is named after South Africa's main Nuclear Research Centre. It was the location where South Africa's atomic bombs of the 1970s were developed, constructed and subsequently stored.
- The Pelindaba Treaty signed in 1996 **aims at preventing nuclear proliferation and preventing** strategic minerals of Africa from being exported freely.
- Namibia is member of **Southern African Customs Union (SACU)**. The SACU consists of Botswana, Lesotho, Namibia, South Africa, and Swaziland.

## 2.8. VICE PRESIDENT VISIT TO AFRICA

### A. India - Morocco

India and Morocco signed two agreements on culture and diplomacy

- to reinforce cooperation in the field of music, art, cultural heritage, cultural activities through the exchange of expertise and information in the related fields.
- to exchange information on training programs for diplomats, experts and researchers, strengthen communication and exchange of expert visits.

### Trade relations

- The India-Morocco Chamber of Commerce and Industry (IMCCI) was launched by Vice President and Moroccan PM Abdelilah Benkirane.
- Bilateral trade between the two countries stood at \$ 1.26 billion in 2015 with Indian exports forming roughly 25 per cent of the trade volume.

### B. India - Tunisia

#### Highlights of visit

- Signed two MoUs on promotion of handicrafts and IT and communication and digital economy
- India will train 350 Tunisian students in next five years and the two sides will promote each other's traditional handicraft as per the agreements.
- The trade between the two countries was a little over 340 million US dollars. India accounts for around 50 per cent of Tunisia's global phosphoric acid exports.
- Tunisia supports India's bid for a place in an expanded UN Security Council.



## 2.9. SHANGRI LA DIALOGUE: ASIA SECURITY SUMMIT

The IISS Asia Security Summit was launched in 2002 by British think tank the International Institute for Strategic Studies and the Singaporean government.

- This annual dialogue brings together defence ministers and military chiefs from 28 Asia-Pacific countries to talk about security in the region.
- It gets its name from the location of the meeting, the Shangri-La hotel in Singapore.
- India's defence Minister participated in the 15th Shangri-La security summit.

## 2.10. GLOBAL PEACE INDEX (GPI) 2016

The **Global Peace Index (GPI)** is an attempt to measure relative position of nations' and regions' peacefulness. It is the product of **Institute for Economics and Peace (IEP)** and developed in consultation with an international panel of experts from peace institutes and think tanks with data collected and collated by the **Economist Intelligence Unit**.

### Highlights of GPI-2016

- India is ranked 141 (out of 163 countries) in GPI 2016. Violence impacted India's economy by \$679.80 billion in 2016, 9% of India's GDP, or \$525 per person.
- **Iceland** has been ranked as the most peaceful country followed by Denmark and Austria.
- **Syria** is the least peaceful, followed by South Sudan, Iraq, and Afghanistan.

Nation	GPI-2016
Bhutan	13 <sup>th</sup>
Nepal	78 <sup>th</sup>
Bangladesh	83 <sup>rd</sup>
Sri Lanka	97 <sup>th</sup>
India	141 <sup>st</sup>
Pakistan	153 <sup>rd</sup>
Afghanistan	160 <sup>th</sup>

## 2.11. MALABAR EXERCISE

**Exercise Malabar** is a trilateral naval exercise involving the US, Japan and India as permanent partners. Originally a bilateral exercise between India and the US, Japan became a permanent partner in 2015.

- The primary aim of this exercise is to increase interoperability amongst the three navies and develop common understanding of procedures for Maritime Security Operations.
- This year (2016) exercise was held in Japan.

## 2.12. HAGUE CODE OF CONDUCT (HCOC)

The **International Code of Conduct against Ballistic Missile Proliferation**, also known as the **Hague Code of Conduct (HCOC)**, was established in 2002 to prevent the proliferation of ballistic missiles.

- HCOC is **voluntary, legally non-binding**, preventing the spread of ballistic missiles that can deliver weapons of mass destruction.
- India joined the HCOC on 1 June 2016.
- The number of signatories of HCOC is 138.
- **China, Pakistan, Israel and Iran** have not joined the voluntary regime yet.

## 2.13. MISSILE TECHNOLOGY CONTROL REGIME

India became the **35th member** of the MTCR. India's efforts to get in got a boost after it joined the **Hague Code of Conduct**, dealing with the ballistic missile non-proliferation arrangement.



### Significance of membership

- The MTCR membership will provide a boost to **India's space and missile technology**, besides Make in India.
- In the 1990s, New Delhi's pursuit of **Russian cryogenic engine** technology was stymied by the MTCR.
- It will enable India to buy **high-end missile technology** and also enhance its joint ventures with Russia.
- It will ease the way for **export of supersonic BrahMos cruise missile**, co-developed with Russia
- India will be able to **import Predator drones** from the US.

### About MTCR

It is a multilateral export control regime. It is an **informal and voluntary partnership** among 35 countries to prevent the proliferation of missile and unmanned aerial vehicle technology capable of carrying above 500 kg payload for more than 300 km.

- China, Israel and Pakistan are not members of MTCR.
- USA, UK, Russia, France, Japan, Italy, Germany, Brazil, South Korea and Australia are prominent members.

## 2.14. INDIA-QATAR

Prime Minister paid his first official visit to gas-rich Qatar. During the visit 7 agreements were signed, including

- MoU between National Investment and Infrastructure Fund (NIIF) and Qatar Investment Authority (QIA), aimed to facilitate participation of Qatari institutional investors in Infrastructure projects in India
- MoU between Financial Intelligence Unit - India (FIU-IND) and the Qatar Financial Information Unit (QFIU) concerning cooperation in exchange of intelligence related to **money laundering, terrorism-financing etc.**

### Importance of Qatar

- Bilateral trade in 2014-15 stood \$15.67 billion of which India's exports accounted only \$1 billion.
- It is also one of India's key sources of crude oil.
- India is the third largest export destination for Qatar after Japan and South Korea, with LNG being the major item of trade.
- Indians comprise the single largest group of migrants in Qatar.
- Prime Minister has been focusing on improving ties with the **Gulf region** which is crucial for **India's energy security**. He has already visited UAE and Saudi Arabia.
- Qatar is member of Gulf cooperation council (GCC).

## 2.15. SCO SUMMIT

Shanghai Cooperation Organization (SCO) annual summit was held in **Tashkent, Uzbekistan**.

- At the summit, for the first time, the SCO will be expanded to accommodate new countries and make them permanent members of the group.
- India and Pakistan signed the memorandum of obligations on 24 June 2016 at Tashkent, thereby starting the formal process of joining the SCO as a full member.

## 2.16. INDIA-VIETNAM

- Vietnam, which is building a naval deterrent to China with Russian-made Kilo-class submarines, is keen on India training its submarine personnel.



- It also has expressed interest to acquire Indian-made BrahMos supersonic cruise missile.
- India has recently provided Vietnam with a US\$100 million Line of Credit which is being utilised by Vietnam for procurement of Offshore Patrol Boats for their Border Guards.

## 2.17. INDIA-AFGHANISTAN

- Prime Minister Modi and Afghan President Ashraf Ghani jointly inaugurated the Afghan-India Friendship Dam in Herat province, Afghanistan.
- The Afghan govt. in 2015 changed the name of the project from Salma dam to Afghan-India Friendship Dam.
- The 42 MW dam will boost the agricultural and industrial sectors of Herat.

## 2.18. HARMFUL PROVISIONS IN RCEP

### Why in News?

- **Médecins Sans Frontières (MSF) or Doctors without Borders**, an international NGO has warned India that it will no more remain 'the pharmacy of the developing world' if the proposed proposals in the Regional Comprehensive Economic Partnership (RCEP) agreement are adopted.

### Detrimental Proposals

- Among the intellectual property text being discussed at the RCEP negotiations, two most worrying are demands for '**Data Exclusivity**' and '**Patent Term Extensions**'.
- **Data exclusivity** is a form of legal monopoly protection for a drug, over and above the patent protections. This is given expressly to compensate for the investment made during clinical trials. It implied that regulators cannot approve a similar drug with similar data for the next five years.
- **Patent term extensions** are given to compensate the company for delays in processing patent applications. A patent term extension will give another five-year monopoly to the innovator company.

## 2.19. BREXIT

Brexit is the inelegant shorthand for Britain's withdrawal from the European Union. The UK opted for a momentous change of course by voting to leave the European Union in a closely fought referendum.

### How UK voted?

- The referendum turnout was 71.8%, with more than 30 million people voting.
- This was the second referendum on Britain's relationship with the European project. In 1975, in a referendum on whether the U.K. should stay or leave the European Community (Common Market) Area, the country voted for staying in with a resounding 67.2 per cent vote.

	Leave	Remain
United kingdom	52%	48%
Scotland	38%	62%
Northern Ireland	44%	56%
England	53.4%	46.6%
Wales	52.5%	47.5%

### Argument put up by both sides during run up of referendum

Issues	Remain side argument	Exit side argument
<b>Immigration</b>	The pro-EU members argue that EU migrants contribute more to the national economy than they take out.	The anti-immigration parties argue this puts a severe strain on national resources and add up to welfare expenditure.
<b>Security</b>	In the era of international terrorism, cooperating with EU will make UK safer	The security risk will increase if the U.K. does not have control over its borders.
<b>Employment</b>	As three million jobs are tied to the EU there could be a jobs crisis if the UK leaves the EU.	There will be a jobs boom without the fetters that EU regulations impose.

<b>Trade</b>	Access to the single European market, free of tariffs and border controls, is critical for the UK as 45 per cent of its trade is with the EU	The EU needs British markets and individual trade deals with European countries can be easily negotiated.
<b>Economy</b>	May put dominance of London as Europe's financial centre at risk as banks will move out	London's status is unassailable as it is already a global power base.



### Britain's exit process

- To begin the withdrawal process, Britain must invoke **Article 50 of the EU's Lisbon treaty**, which has never been used before.
- The first step is to inform the European Council of member states which sets the clock ticking on a **two-year timetable of negotiations**.

## 2.20. ASIAN DEVELOPMENT BANK

- Asian Development Bank (ADB) has approved \$500 million (approximately Rs 3350 crore) loan for constructing a bridge across Ganga.
- Once built, the 9.8 km road bridge in Bihar will be country's longest river bridge.

### About ADB

- It was conceived in the early 1960s as a financial institution that would be Asian in character and foster economic growth and cooperation in the region.
- ADB assists its members, and partners, by providing loans, technical assistance, grants, and equity investments to promote social and economic development.
- It is composed of 67 members, 48 of which are from the Asia and Pacific region.
- India became a founding member in 1966.
- India is holding 6.33% of shares and 5.36% voting rights.
- Japan and the US represent the largest shareholders.

## 2.21. INDIA-USA: COOPERATION IN ANTI-TERROR

Home Ministry signed an agreement to join the global terror database maintained by the **Terrorist Screening Center (TSC)** of the US

- US has already finalised such agreements with 30 countries and TSC has details of **11,000 terror suspects** on its database, including nationality, photos, finger prints, passport number, etc.
- The Research and Analysis Wing (R&AW) and Intelligence Bureau (IB) had opposed giving US unhindered access to the database of terror suspects in India.

## 2.22. MILITARY EXERCISES

- The Air Forces of India and the US concluded four-week "Red Flag" aerial combat exercises at Alaska.
- A bilateral Air Force exercise between India and United Arab Emirates (UAE) was held at Al-Dhafra Air Base in UAE.

## 2.24. THE PARIS PEACE SUMMIT

A one-day Israeli-Palestinian peace summit was held in Paris. Foreign ministers from 29 countries attended the summit to discuss the stalled Israeli-Palestinian peace process.

### Outcome of Summit

Closing statement defined the summit's main goal - **the two-state solution** - and established that the status quo was unsustainable.

- The foreign ministers were "**alarmed by the actions on the ground**," in particular continued acts of violence and settlement activity. They did not accept the Israeli position that Palestinian terror and rejectionism is at the base of the conflict.
- According to the statement the goal is, "**fully ending the occupation that began in 1967**".



## 3. ECONOMY

### 3.1. INDIA POST'S PAYMENT BANK

#### Why in news?

Union Cabinet has approved the setting up of India Post's payments bank at a total project cost of Rs 800 crore.

#### Highlights

- India Post Payment Bank (IPPB), which will generate employment opportunities for about 3,500 skilled banking professionals, will set up 650 branches and 5,000 ATMs across the country.
- IPPB expects to break even by year seven of its operations.
- IPPB will start operations in March 2017 in about 50 districts and will cover the entire country by the end of FY 2018-19.

#### What are payment banks?

- Payment banks are non-full service banks, whose main objective is to accelerate financial inclusion.
- Payments banks will mainly deal in remittance services and accept deposits of up to Rs 1 lakh.
- They will not lend to customers and will have to deploy their funds in government papers and bank deposits.
- They can accept demand deposit, issue ATM/debit cards but not credit cards.
- The promoter's minimum initial contribution to equity capital will have to be at least 40% for the first five years.

### 3.2. KRISHI KALYAN CESS

- Imposition of **Krishi Kalyan Cess** of 0.5% as announced in the Budget.
- KKC is a cess, applicable on all services. It is to be solely used towards financing activities for the improvement of agriculture and farmer welfare.
- Hence new effective Service Tax hence increased to 15% from 14.5%.
- The KKC is based on the idea that levying a cess on a thriving sector service sector (58% of GDP) of the economy can help fund a lifeline to a sector that is in distress (Agriculture).

#### Difference between cess, surcharge, levy and tax

- **Tax:** Any money the govt. takes from you for doing any economic activity is tax.
- **Levy** is the act of charging tax.
- **"Cess"** means tax levied by the govt to raise funds for a specific purpose. It is also a tax on tax.
- **Surcharge** is a charge on any tax, charged on the tax already paid. Govt can spend it anywhere.
- **Duty:** This is an on-border tax charged on goods.

### 3.3. NATIONAL MINERAL EXPLORATION POLICY

#### Why in news?

- The Union Cabinet has approved the National Mineral Exploration Policy (NMEP).
- To encourage mineral exploration in the country, the Mines Ministry has already notified the National Mineral Exploration Trust (NMET).

#### Need

- The Ministry of Mines has, in the recent past, taken a series of measures for the growth of the mineral sector, including allowing 100% FDI. However, these initiatives have fetched only limited success.
- Of India's entire Obvious Geological Potential (OGP) area, identified by GSI, only 10 per cent has been explored and mining is undertaken in 1.5-2 % of this area.

- Further, over the years the dynamics of the mineral sector have undergone sea change thereby creating new demands and imperatives.



### Salient Features

- The NMEP primarily aims at accelerating the exploration activity in the country through enhanced participation of the private sector.
- States will also play a greater role by referring exploration projects, which can be taken up through NMET.
- NMEP has proposed that private entities engaged in carrying out regional and detailed exploration would get a certain share in revenue in mining operation from the successful bidder after the e-auction of the mineral block.
- The revenue-sharing could be either in the form of a lump sum or an annuity, to be paid throughout the period of mining lease with transferable rights.
- Selection of private explorer is proposed to be done through a transparent process of competitive bidding through e-auction.
- For this, reasonable areas or blocks for regional exploration will be earmarked or identified by the government for auctioning.

## 3.4. CIVIL AVIATION POLICY

### Why in news?

The Union Cabinet recently cleared the Civil Aviation Policy in order to boost the domestic aviation sector and provide passenger-friendly fares. This new policy aims at providing various benefits to domestic airline passengers.

### The Policy aims at

- **India to become 3rd largest civil aviation market by 2022** from 9th.
- **Domestic ticketing to grow** from 8 crore in 2015 to 30 crore by 2022. To grow domestic passenger traffic nearly four-fold to 300 million by 2022.
- **Airports having scheduled commercial flights to increase** from 77 in 2016 to 127 by 2019.
- **Cargo volumes to increase** by 4 times to 10 million tonnes by 2027.
- **Enhancing ease of doing business** through deregulation, simplified procedures and e-governance.
- **Promoting 'Make In India'** in Civil Aviation Sector.
- **Ensuring availability of quality certified 3.3 lakh skilled personnel** by 2025.

### Highlights of NCAP

- **Regional Connectivity Scheme**
  - ✓ **Capping of fare:** Rs 1,200 for 30 minutes and Rs 2,500 for hour-long flights.
  - ✓ Revival of airstrips/airports as No-Frills Airports at an indicative cost of Rs.50 crore to Rs100 crore
- **Route Dispersal Guidelines (RDG)**
  - ✓ **MoCA** will categorize the air traffic routes into 3 categories.
- **5/20 rule scrapped.**
  - ✓ Replaced with a scheme which provides a level playing field
  - ✓ All airlines can now commence international operations provided that they deploy 20 aircraft or 20% of total capacity, whichever is higher for domestic operations.

### REGIONAL CONNECTIVITY SCHEME

**WHAT IT MEANS**  
Airlines enrolling in the scheme will ferry passengers between smaller cities in mostly 1 hour flights

<b>22</b> areas will be covered	Fares under the scheme at ₹2,500 or below	Airlines will be chosen through a tender process for the scheme
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**OTHER INCENTIVES**

Reduced service tax, lower VAT and excise duty on jet fuel	A corpus will be built to fund viability gap of airlines operating at such low fares	All airlines, many state governments will contribute to this corpus
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- **Bilateral Traffic Rights**
  - ✓ GoI will enter into 'Open Sky' ASA on a reciprocal basis with SAARC countries and countries located beyond 5000 km from Delhi. i.e., these countries will have unlimited access, in terms of number of flights and seats, to Indian airports, leading to increased flight frequencies.
- **Ease of doing business**
  - ✓ A single window for all aviation related transactions, complaints, etc.
  - ✓ More focus on ease-of-doing business as government plans to liberalize regime of regional flights.
- **Infrastructure development**
  - ✓ **Restoration of air strips** at a maximum cost of Rs 50 crore through Airports Authority of India (AAI).
  - ✓ Four **Heli-hubs** to be developed. Helicopter Emergency Medical Services to be facilitated
  - ✓ Development of **Greenfield and Brownfield airports** by State government, private sector or in PPP mode to be encouraged.
  - ✓ Future tariffs at all airports will be calculated on a 'hybrid till' basis
- Strategic partnership between Ministry of Skill Development and Entrepreneurship and Ministry of Civil Aviation to boost skill initiatives in sector.

### 3.5. NATIONAL SOLAR MISSION

#### Aim

- Generating 100 GW of solar power by the year 2021-22
- To generate 60 GW ground mounted grid-connected solar power and 40 GW through roof-top grid interactive solar power.
- The target for the current year is 2,000 MW and next year target is 12,000 MW.

#### Solar power potential in India

As per the study conducted by ministry of new and renewable energy (MNRE), India's solar power potential is as high as 748 GW, against our country's cumulative installed capacity from all sources at around 275 GW.

#### Work being done

- States step up
  - ✓ This year India had 6,762 megawatts (MW) of grid-connected solar power projects. Of this, Rajasthan tops the list with around 1,269MW.
  - ✓ States like Telangana (527.8MW), Andhra Pradesh (573MW) Tamil Nadu (1,061.8) and Gujarat (1,119.1MW) are also doing well
- To achieve above stated objective, the Ministry of New & Renewable Energy has initiated several projects like:
  - ✓ Scheme for Development of Solar Parks and Ultra Mega Solar Power Projects;
  - ✓ Scheme for Development of Solar PV Power Plants on Canal Banks/ Canal Tops;
  - ✓ Scheme of setting up 1000 MW of Grid- Connected Solar PV Power Projects by CPSUs with Viability Gap Funding.

#### Solar power getting cheaper

- Solar panels made from materials called perovskites.
- Recent bids by companies such as SkyPower, SunEdison were at Rs. 5-6/ unit which is very much comparable to thermal power plants.

#### Less practical than conventional energy

- Solar energy works only when the sun is shining
- Solar systems do not operate efficiently during monsoons or winters when there is fog.
- Blending of solar energy in the grid with thermal energy – and that poses all sorts of practical problems.
- Capital costs of solar installation are also higher.
- **Domestic manufacturing** remains a weak link:
  - ✓ Indian products are of low technology.



### 3.6. "SURYAMITRA"

#### Who are Suryamitras?

Suryamitras are skilled technicians who can install, operate, repair and maintain, service solar powered panels, solar power plants and equipment (For e.g. solar cookers, solar heaters, solar pumps etc.)

#### Suryamitra initiative

- "Suryamitra" is a residential program which is 100% funded by Govt. of India and implemented by NISE.
- The institutes like universities, polytechnics, ITIs etc. are executing the "Suryamitra" skill development program at various locations in the country.
- Suryamitra initiative is also a part of Make in India.

#### National Institute of Solar Energy (NISE)

- An autonomous institution of Ministry of New and Renewable (MNRE), is the apex National R&D institution in the field Solar Energy.
- Its role is to assist the Ministry in implementing the National Solar Mission and to coordinate research, technology and other related works.

### 3.7. FUND OF FUNDS FOR START-UPS

- The Union Cabinet has approved the establishment of "**Fund of Funds for Startups**" (FFS), an initiative of Department of Industrial Policy & Promotion.
- The corpus of FFS is Rs.10,000 crore which shall be built up over the 14th and 15th Finance Commission cycles subject to progress of the Startup India scheme and availability of funds.
- The expertise of SIDBI would be utilized to manage the day-to-day operations
- The monitoring and review of performance would be linked to the implementation of the Start Up Action Plan to enable execution as per timelines.

### 3.8. NATIONAL HIGHWAYS GRID

- National Highway Authority of India is proposing a 'National Highway Grid' which will include 27 horizontal and vertical highway corridors spread across the country.
- The corridors, spaced at a distance of 250 kilometres, will crisscross and connect with each other.
- Out of the total 36,600 km, about 30,100 km are already NHs, but only 18,800 km of them are of four-lanes.
- The rest, either single or two lanes and missing NH link of about 6,500 km, which are either state highways or major district roads, will be made NH and widened to 4 lanes.
- Numbering of all highways running from east to west with even numbers, and north to south roads with odd numbers may also be done.
- The grid will connect 12 major ports, 26 state capitals and more than 45 cities and thus help in quick evacuation and transport of cargo.

### 3.9. RAJASVA GYAN SANGAM

#### Why in news?

The PM has addressed the tax administrators of both Central Board of Direct Taxes (CBDT), and Central Board of Excise and Customs (CBEC), at Rajasva Gyan Sangam.

#### Suggestions

- The necessity of digitization, voluntary tax compliance, facilitation for taxpayers, increasing the tax base, upgradation of digital and physical infrastructure for tax administrators etc.



- Tax evaders should be brought to heel. But the Law enforcement agencies v/s taxpayer friendly departments dilemma, while collecting due taxes from people, should be resolved.
- They both are not essentially at loggerheads, but can be complementary to each other.
- PM has suggested: People should not fear tax administrators.
- Need for tax administrators to engender trust in the system.
- Simplification - User-friendly procedure to increase the tax payments.

### 3.10. P2P LENDING

- Recently, the RBI released a consultation paper on developing regulatory norms for P2P lending.
- It has proposed 6 key areas to frame regulatory guidelines - permitted activity, reporting, prudential and governance requirements, business continuity planning and customer interface.
- RBI proposes a balanced approach to help P2P players flourish as well as safeguard them from various risks of business fallouts. Proper regulation will raise credibility of P2P entities and thus help in their growth

#### What is Peer-To-Peer Lending (P2P)?

- It is a method of debt financing that enables individuals to borrow and lend money - without the use of an official financial institution as an intermediary.
- It gives access to credit to borrowers who are unable to get it through traditional financial institution.
- P2P lending boosts returns for individuals who supply capital and reduces interest rates for those who use it. However it demands more time and effort from them, and entails more risk.
- The basic business model of an online P2P player is to provide a platform to connect lenders with borrowers. The lender will put their savings/investment into an account to be loaned out to borrowers and get a good rate of return.
- Two prominent online lending portals in the country are Faircent and ilend.

### 3.11. FDI POLICY REFORMS

#### Why in news?

The government has made changes to the FDI policy. This is the second biggest reform in FDI since those announced in November 2015.

#### Important changes in different sectors

- **Defence Sector:** The policy has been tweaked to allow 100 per cent FDI by doing away with the condition of access to "**state of the art**" technology. **It has now been modified to "modern or for other reasons"**, a move that will widen the scope of investment by foreign players. The new norms have also been made applicable to manufacturing of small **arms and ammunitions covered under Arms Act 1959**. Under the current policy, FDI up to 49 percent was allowed under automatic route and beyond that under the approval route on case-to-case basis.
- **Pharmaceutical Sector:** In this sector, 74% FDI would be allowed in the pharmaceutical sector under the automatic route in existing domestic companies (Brown Field projects). Currently, FDI up to 100% is permitted in new projects in the pharma sector (Green field projects).
- **Aviation Sector: 100% FDI under automatic route in brownfield airport projects.** FDI beyond 74% for brownfield projects is under government route. Earlier, the FDI

policy on airports permitted 100% FDI under automatic route in Greenfield projects.

- **Animal Husbandry:** 100% FDI allowed in Animal Husbandry. The clause of controlled conditions for 100% FDI under the automatic route for animal husbandry has been done away with.



## WHAT THE CHANGES MEAN

Sector	Proposed FDI regime	Existing FDI regime	Implication
Defence	100% FDI in defence via govt approval	49% for foreign entities under automatic route and beyond 49% on government approval on a case-by-case basis subject to access to state-of-the-art technology	Foreign defence firms can set up manufacturing facilities in India
Pharmaceuticals	74% FDI through automatic route in brownfield	100% FDI in brownfield through govt approval	More private equity deals in pharma as new regulation clears uncertainty over FIPB approvals
Aviation	100% FDI for foreign entities	49% for foreign entities	Local airlines can attract more capital
<b>Broadcast</b>			
•Cable networks			More investment opportunities
•Direct to home (DTH)	100 % FDI allowed via automatic route	100% FDI allowed, only 49% allowed via automatic route	No FDI expected till cross-media ownership cap removed
•Headend-in-the sky (HITS)			

Source: Department of industrial policy and promotion

- **Food products:** 100% FDI under government approval route. It will include trading in food products including through e-commerce, in respect of food products manufactured or produced in India.
- **Single Brand Retail Trading:** The new policy relaxes local sourcing norms upto three years and a relaxed sourcing regime for another five years for entities undertaking Single Brand Retail Trading of products having 'state-of-art' and 'cutting edge' technology.

## 3.12. CENTRAL PORT AUTHORITIES BILL 2016

### Why in news?

- The shipping Ministry has come up with a new Central Port Authorities Bill 2016 to replace the 5 decade old Major Port Trust Act 1963.
- The new Bill when enacted will enable the 11 major ports to function like corporate entities as many of the provisions are in line with the Companies Act, 2013.

### Key features of the Bill

- The draft bill has proposed a simplified structure for the board by bringing it down to nine members that includes three functional heads of major ports as members apart from a Government nominee member and a labour nominee member.
- To increase their functional autonomy, the ports have been delegated powers to raise loans and issue securities for the purpose of capital expenditure and working capital requirement
- Ports will now be able to lease land for port-related use for up to 40 years, and for non-port related activities up to 20 years.
- The ports have to comply with the auditing and accounting standards as prescribed in the Companies Act, 2013, i.e. they will conduct internal audit of their activities and functions.
- Power of Central Govt. to take over the control of the Port Authority is limited to the event of grave emergency or in case of persistent default in performance of their duties.
- Provisions of CSR & development of infrastructure by Port Authority have also been introduced in line with Companies Act, 2013.

### 3.13. INCENTIVES OFFERED FOR TEXTILE SECTOR



#### Why in news?

The Centre has announced a **Rs. 6,000 crore special package** to help create one crore jobs, mostly for women, in the next three years.

#### What is in it?

- The package includes several tax and production incentives. The package also provides the sector more flexible labour laws and financial incentives.
- **Labour welfare:** Overtime hours for workers shall not to exceed eight hours per week - in line with International Labour Organisation norms.
  - ✓ **Fixed term employment** will be introduced for the sector to mitigate seasonal nature of employment.
- **Employees Provident Fund:** Govt. is to bear the entire employer's contribution of 12 per cent under the EPF Scheme, for new employees of garment industry earning less than Rs. 15,000 per month, for the first three years.
- **A New scheme:** will be introduced to refund the state levies which were not refunded so far. Of the Rs. 6,000 crore package, Rs.5,500 crore is for an additional 5% duty drawback for garments.
  - ✓ **Drawback at 'all industries rate'** would be given for domestic duty paid inputs even when fabrics are imported under 'Advance Authorization Scheme.'
  - ✓ Rs.500 crore will be for additional incentives under **Amended Technology Upgradation Funds Scheme (ATUFS)**, also the subsidy in this scheme is increased from 15% to 25%, providing a boost to employment generation.
- From **input-based to outcome-based incentives** i.e., to disburse subsidy only after expected jobs have been created.

### 3.14. FIXING PSU BANKS

#### Background

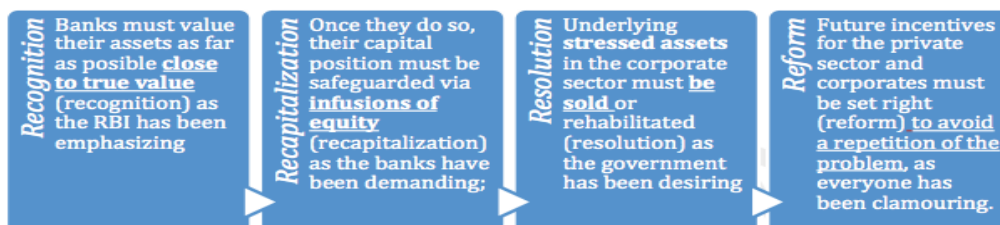
- Our banks are saddled with too many non-performing loans and credit expansion has slowed dramatically. This is called as '*Balance Sheet Syndrome with Indian characteristics*' – by Economic survey.
- Growth in industrial credit (year on year) has slowed to less than 5% in the first quarter of 2016. This is not enough for creating growth conditions >7%.

#### The nature of the problem

- **Failure in Recognition:** Assets which are in reality NPAs were not classified as such by banks, but were being 'ever-greened' into new loans as revealed by RBI's asset quality review
- When NPAs were being recognized due to RBI's initiative, this has led to large losses in to the tune of Rs. 30 crore for PSBs (excluding the SBI).
- **All pervading crisis of PSBs:** Since all the PSBs have balance sheet problem, the NPAs have to be resolved urgently.
- **Indispensibility of PSBs for healthy economic growth.** Though the private sector banks are in much better shape, but they account for only a quarter of total lending.
- **Contracting credit conditions:** Corporate profits are low while debts are rising, forcing firms to cut investment to preserve cashflow.

#### Solutions

- This requires action on 4 fronts or 4 **Rs:** *Recognition, Recapitalization, Resolution, and Reform.*



#### Recapitalization of public sector banks : Steps taken:

- *Recapitalization using special declaration of dividends from the built-up reserves in RBI, as proposed in the Economic Survey.*
- *Indradhanush scheme is being implemented.*
- *RBI has devised two schemes for the purpose of fresh capital from investors and new management. Strategic debt restructuring scheme and Scheme for Sustainable Structuring of Stressed Assets (S4A).*
- *The proposed National Infrastructure and Investment Fund (NIIF), operating with private partners, will provide both equity and new credit to stressed infra projects going through the SDR mechanism.*

### 3.15. SCHEME FOR SUSTAINABLE STRUCTURING OF STRESSED ASSETS

#### Objective

To strengthen lenders' ability to deal with stressed assets and put real assets back on track by providing an avenue for "reworking the financial structure" of big corporate entities "facing genuine difficulties".

#### Magnitude of the problem

Bad loans surging to as high as Rs 6 lakh crores, 4.35% of total bank loans, there is a lot of stress in the system. Total stressed assets (bad loans + standard restructured loans) are estimated to be 15% of total bank loans.

#### Highlights

- Banks can split the overall loans of struggling companies into sustainable and unsustainable based on the cash flows of the projects.
- The unsustainable debt could be converted into equity or a convertible security. However at least 50% of the debt should be serviced in the same period as that of the existing loan.
- Once the unsustainable debt is converted to equity, banks can sell this stake to a new owner who can run the business with a more manageable debt.
- An advisory body called **Overseeing Committee** will review the resolution plans submitted by Banks. It will check reasonableness and adherence to the guidelines.
- Projects with a loan of at least Rs 500 crores and have commenced commercial operations are eligible to be restructured under S4A.

#### Other steps taken by RBI

- 5:25 Scheme: It allows banks to extend long-term loans of 20-25 years to match the cash flow of projects, while refinancing them every 5 or 7 years.
- Strategic Debt Restructuring (SDR) - consortium of lenders converts a part of their loan in an ailing company into equity, with the consortium owning at least 51 per cent stake
- Corporate Debt Restructuring (CDR) mechanism and Joint Lenders' Forum.

### 3.16. STRICTER KYC & DISCLOSURE FOR P-NOTES

#### Background

- Special Investigation Team (SIT) on black money has suggested ensuring that P-Note route is not used for money laundering.



- Earlier in 2007, Offshore/overseas derivative instruments (ODIs) used to account for as high as 55% of the total foreign fund flows in Indian capital markets, now their share has fallen to a record low level of 9.3%.

#### **What are offshore derivatives instruments (ODIs)?**

- (ODIs) are investment vehicles used by overseas investors for an exposure in Indian equities or equity derivatives.
- These investors are not registered with SEBI, either because they do not want to, or due to regulatory restrictions.
- These investors approach a foreign institutional investor (FII), who is already registered with SEBI. The FII makes purchases on behalf of those investors and the FII's affiliate issues them ODIs.
- P-Notes are a type of offshore/overseas derivative instruments (ODIs)

**Financial Intelligence Unit – India:** was set by the Government of India in 2004 as the central national agency responsible for receiving, processing, analyzing and disseminating information relating to suspect financial transactions.

### **3.17. MODEL GST LAW**

#### **Why in news?**

The Government has unveiled a draft version of the 'Model GST Law' for comments from various stakeholders. Once implemented, the GST will subsume all existing indirect tax provisions under customs law, central excise law, service tax law, VAT laws, etc.

#### **What is GST?**

GST is a value added tax that will replace all indirect taxes levied on goods and services by the Government, both Central and States, once it is implemented. GST would amalgamate various taxes and create a single tax which would mitigate cascading or double taxation.

#### **Features**

Model GST law contains two parts - the Goods and Services Tax Act, 2016 and the Integrated Goods and Services Tax Act, 2016.

- The GST law will comprise of Central GST (CGST), State GST (SGST) and Integrated GST (IGST) which will be levied on the same taxable value.
- The CGST and SGST shall be simultaneously imposed on intra-state supply of goods and services, while the IGST on interstate supplies.
- Taxable event under GST is 'supply of goods and services' instead of the existing multiple taxable events like manufacture, rendering of service, sale of goods.
- The GST law maintains distinction between goods and services. Definition of 'goods' is in line with Sales of Goods Act, 1930 and services mean anything other than goods.
- GST rate will be specified in the schedules of this law.
- It also provides for tax deduction at source (TDS) for online transactions, clearly bringing ecommerce under GST fold.
- The law provides for appointment of three classes of officers, viz.,
  - ✓ CGST officers
  - ✓ SGST officers and
  - ✓ IGST officers who will be responsible for administering the respective GST law.
- The law gives central and state GST officers powers to conduct audit and inspection as well as search and seizure operations in cases of tax evasion.
- Suppliers are liable to be registered in each State from where supply of goods and/or services is made.
- The law provides for the constitution of a National GST appellate tribunal by the Centre, with a branch in each state to hear disputes. Appeals must be filed within 3 months from the date of communication of order.



### 3.18. NRI CAN APPLY TO NPS ISSUE

- The Centre has announced that non-resident Indians (NRIs) can now open National Pension Scheme (NPS) accounts **online**. Earlier NRIs could only make paper-based applications to banks.
- In addition, NRIs will get to open NPS accounts on both repatriable and non-repatriable basis.
- For both, they will be able to join through their NRE/FCNR/NRO accounts.

**Repatriable Accounts:** Legally Indian rupees can be transferred back to foreign currency, that is money can be converted to any foreign currency.

- Ex: NRE Account (Non-resident External Account): Savings, Current & Time Deposits
- FCNR-B Account (Foreign Currency Non-resident Bank Deposits)

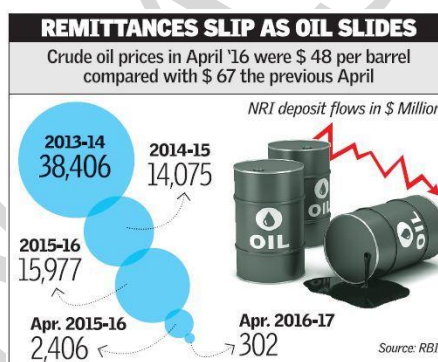
**Non-Repatriable Accounts:** Money cannot be converted to any foreign currency.

NRO Account (Non-resident Ordinary Rupee Account) – Savings, Current and Time Deposits accounts.

### 3.19. FALL IN NRI REMITTANCES

#### What is the Issue?

- 60% of the India's remittances come from Gulf countries.
- Due to slide in oil prices the suppliers i.e., gulf countries are most affected. Remittances by non-resident Indians (NRIs) fell 87 per cent in April.
- The biggest fall was registered in the Non-Resident (External) Rupee Account (NR(E)RA) category, which saw inflows decreasing to \$203 million in April. It was \$2,200 million in the year-ago period.



#### Impact on India

- Healthy current account deficit has been one of the redeeming features of the country's external sector and prevented crisis.
- A huge drop in the import bill has compensated Indian economy.
- According to Moody's diversified location of Indian workers overseas will balance out falling remittances from Gulf.
- Further, relatively diverse occupations of their workers would provide a buffer against an oil-related slowdown in remittances.
- Negative Impact:
  - ✓ Certain regions in country (for ex: Kerala) are significantly affected.
  - ✓ Lay-offs in many Gulf countries have increased the unemployment conditions in India.

### 3.20. SINGAPORE INTERNATIONAL ARBITRATION CENTER

#### Why in news?

Singapore International Arbitration Centre (SIAC) in June 2016 signed a Memorandum of Agreement (MoA) with Gujarat International Finance Tec-City Company Limited (GIFTCL) and GIFT SEZ Limited (GIFT SEZ) to establish a representative office in India.



## Highlights

- **Aim:** To resolve international commercial disputes with the collaboration of SIAC and the Singapore International Mediation Centre (SIMC) with Indian companies.
- As per the agreement, GIFTCL, GIFT SEZ and SIAC will collaborate to promote the use of arbitration, mediation and other dispute resolution mechanisms.
- It also includes the innovative '**Arb-Med-Arb**' service (Arbitration - Mediation - Arbitration).
- SIAC's representative office will promote its international arbitration services to Indian users.

**Arb-Med-Arb** is a process where

- A dispute is first referred to arbitration before mediation is attempted.
- If mediation works, mediated settlement may be recorded as a consent award.
- If mediation fails, they may continue with the arbitration proceedings.



## Gujarat International Finance Tec-City or GIFT

- It is first of the 100 smart cities.
- GIFT city is the first IFSC (International financial services centre) and to be set up in a SEZ.
- GIFT City is a US\$20-billion project combining state-of-the-art connectivity, infrastructure and transportation with sustainable growth.
- From offshore banking to currency convertibility, re-insurance, commodity and securities trading and capital raising all kinds of financial activity can take place inside this IFSC.

## 3.21. INCOME DECLARATION SCHEME

### Why in news?

- The Finance Act 2016 passed in the budget session provided for Income Declaration Scheme, which gives an opportunity to all persons to declare their undisclosed income.
- The Scheme becomes effective from 1<sup>st</sup> June and will be valid till 30<sup>th</sup> September for filing declarations and 30<sup>th</sup> Nov for payment of penalty.

### Key Features of the Scheme

- Undisclosed income will be taxed at 30% plus a "Krishi Kalyan Cess" of 25% on taxes payable and an additional penalty of 25% on taxes payable, which in totality amounts to **45% of income declared** under the scheme.
- The scheme shall apply to undisclosed income whether in the form of investment or assets pertaining to year 15-16 or before.
- In case of investment the undisclosed income will be based on Fair Market value as on 1<sup>st</sup> June 2016.

### Protection available under the Scheme

- The declarants are given immunity from prosecution under Income tax Act, Wealth Tax Act and Benami Transaction Act.
- However, foreign assets or income to which the Black Money Act 2015 applies are not eligible for declaration under this scheme.
- Undisclosed income acquired through corruption is not covered under the scheme.

## 3.22. WORLD INVESTMENT REPORT 2016

### Why in news?

UN Conference for Trade and Development (UNCTAD) has released the World Investment Report 2016.



### Salient points

#### • Global Investment Trends

- ✓ Global FDI flows jumped by 38% to \$1.76 trillion, their highest level since the global financial crisis of 2008–09.
- ✓ FDI flows are expected to decline by 10–15% in 2016, reflecting the fragility of the global economy, persistent weakness of aggregate demand, sluggish growth in some commodity exporting countries, effective policy measures to curb tax inversion and a slump in MNE profits.

#### • Regional Investment Trends

- ✓ After 3 successive years of contraction, FDI inflows to developed countries bounced back, reach a new high of \$765 billion, 9% higher than in 2014
- ✓ India continues to be among the top ten countries in terms of FDI inflows globally and the fourth in Asia
- ✓ India's FDI inflows increased to \$44 billion in 2015 to \$35 billion in 2014

#### • Outflows

- ✓ There has been a decline in most developing and transition regions.
- ✓ The declining trend in India's outflows can be explained by the collapse in the commodity side

### About UNCTAD

- It is the principal organ of the United Nations General Assembly dealing with trade, investment, and development issues. The organization's goals are to: "maximize the trade, investment and development opportunities of developing countries."
- It organizes: World Investment Forum
- It publishes reports like: World Investment Report, Technology and Innovation Report

## 3.23. GLOBAL RETAIL DEVELOPMENT INDEX

- In the Global Retail Development Index (GRDI), released by AT Kearney, India **jumped 13 positions** and was placed **2nd in retail potential** in the 2016.
- 30 developing countries were profiled to analyse them on 25 macroeconomic and retail-specific variables, to identify the markets attractive today, and those with future potential.
- The report thus helps retailers devise successful global strategies to identify emerging market investment opportunities.

## 4. SOCIAL



### 4.1. VIDYANJALI SCHEME

- The Ministry of HRD recently launched the Vidyanjali scheme aimed at boosting the education system by delivering volunteer teachers to government schools.
- It will not replace the regular and professionally qualified teachers in the government schools
- The volunteer's responsibility is towards overall development of the child, not academics.
- The volunteer service will be used in developing skills like public speaking, creative writing, counseling, music and dance.
- The project is being started in 2200 schools across 21 states in its first phase, it will be gradually expanded to the all the government run schools of the country.

#### Eligibility and Selection

- No qualification is required to volunteer for this scheme.
- Foreign nationals can also apply if they have an OCI Card in their charge.
- Block Development Officer has been given the responsibility for scrutinizing the applications of the volunteers.

### 4.2. NATIONAL COMMITTEE ON RAMAYAN AND KRISHNA CIRCUIT

The first meeting of the National Committee on the Ramayan and Krishna Circuits under the Swadesh Darshan Scheme was held recently.

#### Swadesh Darshan Scheme

- It was launched with the aim of developing theme based tourist circuits in the country, under Ministry of Tourism and Culture.
- Under the scheme 13 thematic circuits have been identified for development.
- These are North-East, Himalayan, Coastal, Krishna, Desert, Tribal, Eco, Wildlife, Rural, Spiritual, Ramayana and Heritage Circuits.

#### Ramayan Circuit

- This circuit includes places associated with the legends of Lord Rama in various states, but dominantly in Uttar Pradesh.
- Under this circuit eleven destinations spread across six states have been proposed.
- The destinations covered are Ayodhya, Nandigram & Chitrakoot in UP; Sitamarhi, Buxar & Darbhanga in Bihar; Hampi in Karnataka and Rameshwaram in TN.

#### Krishna Circuit

- This circuit has places associated with the legends of Lord Krishna in various states.
- Under this circuit 12 destinations spread across five states have been proposed.
- The destinations are Dwarka in Gujarat; Nathdwara, Jaipur and Sikar in Rajasthan; Kurukshetra in Haryana; Mathura, Vrindavan, Gokul, Barsana, Nandgaon and Govardhan in UP and Puri in Odisha.

### 4.3. NEED FOR BASIC INCOME

- Recently, Swiss people have voted against the idea of a Universal Basic Income. Three-quarters of Swiss voted against the referendum.
- Switzerland is the first country to hold such a vote.



- A basic income is an income unconditionally granted to all citizens on an individual basis, without means test or work requirement.
- It is a form of minimum income guarantee that is being paid irrespective of any income from other sources.

#### 4.4. SUBRAMANIAN COMMITTEE ON EDUCATION

##### Why in news?

- Recently a committee headed by T.S.R. Subramanian has submitted its report for evolution of a National Education Policy.
- Two previous education policies had come one in 1968 and another in 1986, under Indira Gandhi and Rajiv Gandhi govts respectively. The National Education Policy (NEP) of 1986 was revised in 1992.

##### Main recommendations of the Report

- Total public spending on education must increase from current 3% to 6% of GDP with immediate effect.
- Compulsory licensing or certification for teachers in government and private schools should be made mandatory, with provision for renewal every 10 years based on independent external testing.
- Pre-school education for the age group of 4-5 years should be declared as a right and should be followed by a programme of implementation.
- The ambit of Mid Day Meal scheme should be expanded to cover students of secondary schools.
- Teacher Entrance Tests (TET) should be made compulsory for recruitment of all teachers. Also for admission to B.Ed courses minimum marks at graduate level should be 50%.
- The no detention policy must be continued for children until class V when the child will be 11 years old. At the upper primary stage, system of detention shall be restored subject to the provision of remedial coaching and at least two extra chances being offered to prove capability to move to a higher class.
- The 25% economically weaker section quota in private schools should be extended to minority institutions, as number of schools claiming religious or linguistic minority status has increased tremendously.

##### Other recommendations

- UGC Act must be allowed to lapse once a separate law is created for the management of higher education. UGC's role and responsibilities be reduced to disbursement of scholarships and fellowships.
- Top 200 foreign universities should be allowed to open campuses in India.
- An Indian Education Service (IES) should be established as an all India service under HRD ministry with officers being on permanent settlement to the state governments.
- Since level of malnutrition and anaemia continue to be high among adolescents therefore mid-day meal (MDM) program should now be extended to cover students of secondary schools.
- A National Level Test open to every student who has completed class XII from any School Board should be designed.

## 4.5. DRAFT NATIONAL WOMEN POLICY 2016

### In News

Union WCD Minister released the draft National Policy for Women, 2016



### Need for new Policy

- Women's attitude towards themselves and their expectation from life has changed since 2001.
- Growth in last 15 years has created unique opportunities and challenges for women.
- Women role in society has started changing from recipients of welfare benefits to equal contributor towards nation's development.

### Salient Points of New Policy

- It shifts the focus from entitlements to rights and from empowerment to creating an enabling environment.
- Health including food security and nutrition: Focus on geriatric, adolescent, reproductive and psychological health care
- Education: Better access to all levels of education and removing gender gap in education
- Economy: Equal employment opportunities, skill development and training
- Governance and Decision Making: Increasing women participation in political arena, administration, civil services and corporate boardrooms
- Violence against women: Legislation relating to women safety will be reviewed. Prevention of trafficking and female foeticide.
- Enabling Environment: Ensuring safe drinking water, sanitation, social security.
- Environment and Climate Change: Addressing gender concern during distress migration and displacement due to climate change and ecological degradation.

### Few Steps Already Taken By Government

- Enabling safety and security of women – with initiatives such as One Stop Centres, Women Helpline, Mahila Police Volunteers, creating immediate response mechanism through panic buttons in mobiles etc
- Creating eco-systems to encourage entrepreneurship amongst women – through platforms like Mahila E-Haat, mentoring through Women Entrepreneurship Council etc
- Training and capacity building of all stakeholders including youth through Gender Champion initiative, frontline workers, women sarpanches and all officials dealing with policy and delivery systems impacting women.
- Facilitating women in workplace – through gender friendly work place, flexi timings, increased maternity leave, provision of child care / creches at workplace, life cycle health care facilities.

## 4.6. DOMESTIC VIOLENCE

The Parliament has enacted several laws to protect the women from domestic violence at the hands of husband or his relatives.

- The Dowry Prohibition Act, 1961
- In 1983, it introduced s.498-A in the IPC
- Domestic Violence Act, 2005

### Issue

- These have been hailed as landmark legislation giving voice to the silent sufferers.
- At the same time, misuse also happens in large numbers. In most cases relatives of husband are wrongly implicated who then have to undergo the rigours of the criminal justice system.

- Thus, there is a demand for amending these laws. *Recently*, the issue was raised in the Rajya Sabha.



#### **Suggestion: As per Law Commission**

- The police must follow the guidelines of arrest as given by SC in *DK Basu vs State of West Bengal*.
- The necessity of arrest has to be properly established.
- A mechanism of dispute settlement like conciliation and mediation must be mandatorily initiated before making any arrest, unless the facts disclose an aggravated form of cruelty.
- Option of compounding of offence should be available to parties.
- Need to inculcate sensitivity among all the actors in matrimonial litigation- police, lawyers and judiciary.

### **4.7. OCCUPATIONAL HEALTH HAZARDS**

- In a recent case on Occupational Health hazard, Supreme Court directed the Gujarat government to pay a compensation of 3 lakh per person to the kin of 238 people who died of silicosis.
- It also directed the Madhya Pradesh government to compensate the 304 workers who are afflicted by the disease and unable to work.

#### **Significance of SC Directive**

- Silicosis is listed as an occupational disease in India but rarely have workers been able to prove that illness or death was caused due to exposure to silica dust.
- It exposed the indifference of the authorities to act even when they had been ordered by the NHRC to do so earlier.
- It has set a good precedent for recognizing the severity and impact of occupational hazards on the health of the poor.

### **4.8. TRANSGENDER RIGHTS**

#### **Why in News?**

- Delhi govt has introduced “transgender category” in forms for registration of birth and death certificates.
- In another development Christian transgenders may get equal property rights soon.
- Also, Government of Odisha conferred the Below Poverty Line status to transgenders in Odisha.

#### **Birth and Death Certificates**

- The Delhi government has issued notices to all registrar offices to duly make the changes in birth and death certificate forms.
- Registration of birth and death from transgender community is very less and even those who do, register as females.
- After the SC order in 2014 recognizing transgender as third gender this is one of the first changes on ground.

### **4.9. GLOBAL GENDER GAP REPORT**

- The World Economic Forum Global Gender Gap Report ranked India at 139 out of 145 countries on the economic participation and opportunity gap.
- India’s overall female labour force participation (FLFP) rate has dropped from 35% in 1991 to 27% in 2014 while the world average is around 50%.



- In Sep 2015 the twentieth anniversary of **Beijing Declaration** (Sep, 1995) was celebrated.
- Beijing Declaration was an attempt to advance women's rights, such as the right to live free from violence, to go to school, to participate in decision-making and to equal pay.

#### 4.10. RECURRENCE OF POLIO

- A polio strain was detected from a sewage sample collected near the Secunderabad Railway Station.
- The samples showed the presence of **Type 2 vaccine derived polio virus (VDVP)**, which had undergone ten nucleotide changes.
- If the weakened type-2 virus used in oral polio vaccine [OPV] continues to multiply for long, mutations may arise.
- If six or more nucleotide changes happen then it is called vaccine-derived poliovirus (VDVP).
- VDVP is extremely rare and found in children with immune-deficiency and among populations with low immunity levels.
- Telangana will soon see the largest ever mass vaccination drive with **Inactivated Polio Vaccine (IPV)**.
- Trivalent OPV used until now contained live but weakened type 1, 2 and 3 polio viruses.
- Subsequently, the country switched to bivalent oral polio vaccine or BOPV by dropping type 2 as this variant was responsible for vaccine-derived polio cases.
- Following this, the **injectable IPV** was introduced, containing killed viruses of all three types; viral-shedding is a non-issue with IPV.
- IPV is made from heat-killed virus that cannot cause the disease in any case, because the pathogen is not alive.

#### 4.11. ROAD SAFETY IN INDIA

- An official report released by Union Road Transport and Highway Ministry said that 1.46 lakh people lost their lives in road accidents in India in 2015.
- As a signatory to **Brasilia Declaration**, India is committed to reduce the number of road accidents and fatalities by 50 per cent by 2020.
- The number of deaths in road accidents in 2015 is 5% more than in 2014.
- A majority of those killed in 2015 were in the age group of 15 to 34.
- Thirteen States, including TN, MP, Karnataka, Kerala and UP, accounted for most accidents.
- Among cities, Mumbai had the highest number of accidents (23,468), while Delhi saw the most number of such deaths (1,622).
- Driver's fault was responsible for 77 percent of the accidents, deaths and injuries mainly because of over speeding.

#### 4.12. HEALTH PROTECTION SCHEME

- Health Protection Scheme (HPS) or Rashtriya Swasthya Surakhsha Yojana (RSSY) is a new nomenclature for Rashtriya Swasthya Bima Yojana (RSBY).
- It was announced in the budget 2015-16 and its details are yet to be announced.

**Note: Please refer schemes section for details**

### 4.13. REFORMS IN MEDICAL EDUCATION

- A recent Supreme Court judgment made all admissions to medical colleges in India subject to obtaining a rank in National Eligibility cum Entrance Test (NEET).
- NEET is a common entrance test system for admission to undergraduate and post-graduate medical courses.
- There are about 35 entrance tests for admissions to 412 medical colleges in the country.
- Based on petition filed in 2009, SC directed the possibility of holding single national test.
- In 2016, SC permitted the national test to be held in two phases for the current year.



### 4.14. AGREEMENT ON TRADITIONAL MEDICINE

- Ministry of AYUSH, Government of India and the World Health Organization have signed a Project Collaboration Agreement (PCA) on traditional medicine.
- It is for cooperation on promoting quality, safety and effectiveness of service provision in traditional and complementary medicine.
- It aims to support WHO in the development and implementation of the 'WHO Traditional and Complementary Medicine Strategy: 2014-2023'
- The PCA for the period 2016-2020 will deliver for the first time WHO benchmark document for training in Yoga, and WHO benchmarks for practice in Ayurveda, Unani and Panchakarma.
- These will contribute significantly to the strengthening of national capacities in traditional medicine
- Will help in establishing regulatory frameworks for traditional medicine products and practice and promote their integration in national healthcare systems.
- It will lead to inclusion of Ayurveda and Unani in the International Classification of diseases and the International Classification of Health interventions.

### 4.15. JUVENILE JUSTICE ACT: DRAFT MODEL RULES

- Women & Child Development Ministry has released the Draft Model Rules under the Juvenile Justice (Care and Protection of Children) Act, 2015.
- The Act has come into force from January 2016 repealing the 2000 Act.

#### Important Provisions made in the rule

- The Draft rules prescribe detailed **child friendly procedures for police, Juvenile Justice Board (JJB) and Children's Court.**
- The Board and the Children's Court are to adhere to **the principle of best interest of the child and the objective of rehabilitation and reintegration of the child in the society.**
- Every state Government is required to set up at least one "place of safety" in a State for the rehabilitation of such children.
- The Rules prescribe for extensive services to be provided to such children through regular monitoring.
- To facilitate quick and smooth adoption of children, the entire adoption process has been made online and transparent.
- It is proposed that every police station will have child friendly infrastructure, similarly special Children's Room will be designated in every Court complex.





- Proper medical and legal aid will be provided to juvenile criminals, and their parents and guardians will be duly informed.
- It also prescribes detailed procedures for determination of age. The JJB or the Juvenile Justice Committee will determine the age of the child within 30 days from the date of submission of application.

## 4.16. HYSTERECTOMY: SURVEY

### Why in News?

- A Hyderabad based NGO undertook a door-to-door survey and recorded 728 such cases of hysterectomy in the villages of Kowdipally mandal of Medak district.
- Also, for the first time, the National Family Health Survey-4 has included a question on hysterectomies. This data is yet to be published.

### What is Hysterectomy?

A hysterectomy is **an operation to remove a woman's uterus for different reasons**, which generally includes:

- Cancer of the uterus, cervix, or ovaries
  - Endometriosis
  - Abnormal vaginal bleeding
  - Chronic pelvic pain
  - Adenomyosis, or a thickening of the uterus
- Hysterectomy for noncancerous reasons is usually considered only after all other treatment approaches have been tried without success.

### Findings of the report

- Many of the women were in their 20s and 30s and they had gone to private doctors for the procedure and had sold their jewellery to fund the procedure.
- Hysterectomies have been reported from rural pockets of about half a dozen States which includes Rajasthan, Bihar, Chhattisgarh, Karnataka, Maharashtra, especially in the last six years.
- Poor illiterate women are prescribed the procedure for white discharge, irregular menstrual cycles, and even abdominal pain.
- And due to fear of cancer (which doctors convince them of), they easily opt for this procedure.
- Loss of daily wages during menstruation makes the prospect for opting this procedure more appealing.

## 4.17. WORLD HUMANITARIAN SUMMIT (WHS)

The United Nations World Humanitarian Summit (WHS) was held in Istanbul. It is an initiative of the Secretary-General of UN and is being organized by the Office for Coordination of Humanitarian Affairs (UN OCHA).

**Purpose of the Summit:** The purpose of the summit is to set a forward-looking agenda for humanitarian action to collectively address future humanitarian challenges. The aim is to build a more inclusive and diverse humanitarian system committed to humanitarian principles.

**Goals of the summit:** The three main goals of the summit are:

- Reaffirm our commitment to humanity and humanitarian principles.
- Initiate actions and commitments which enable countries and communities to prepare for and respond to crises and be more resilient to shocks.
- Share best practices which help save lives around the world, placing affected people at the Centre of humanitarian action and alleviating suffering.



## 4.18. SAIEVAC MEETING

- Eight nations composing the South Asia Initiative to End Violence Against Children (SAIEVAC) assembled in Delhi in May for their 4th Ministerial Meeting.
- It was hosted by the Ministry of Women and Child Development.
- The objective was to set strategies and agree on commitments to ensure the protection and security of the children of the region.
- The meeting saw a discussion on ways and means to achieve Sustainable Development Goals, review of progress of ten years of SAIEVAC and five-year work plan (2011-16).
- SAIEVAC is an intergovernmental regional body comprising of 8 SAARC countries- Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka.
- It took its present shape in 2010 when the South Asian Association for Ending Violence Against Children was transformed into SAIEVAC.

## 4.19. CENSUS REPORT ON CHILD MARRIAGE

### Why in News?

The Census 2011 reveals that child marriage is rampant in India, with **almost one in three married woman** having been wed while she was still under 18 years.

### Key Findings

- 78.5 lakh girls (2.3% of all women or girls who were ever married or were married in 2011) were married while they were not yet 10 years of age.
- 91% of all married women were married by the age of 25 years.
- **Alarming 30.2% of all married women (10.3 crore girls)** were married before 18.
- **As per Census 2001 data**, this number was 43.5%.
- **Literacy:** While 38.1% of illiterate married women were married below the age of 18, 23.3% of literate married women got married below the legal age.

## 4.20. COMMERCIALIZATION OF EDUCATION

SC has said that state has authority to regulate admissions and fixing of fees of private unaided education institution.

### SC Judgement

- Right to establish and administer of private unaided professional institutions is not absolute.
- States power to regulate admission and fixing of fees is a reasonable restrictions for larger public interest.
- Court judged that education institution can never become a business.

### Petitioners Argument

- They had a right under Article 19 (1) (g) "to practice any profession, or to carry on any occupation, trade or business".
- SC in their earlier judgment has recognized right to administer educational institution as an 'occupation' under the Constitution.

## 4.21. REDUCED MATERNAL AND NEONATAL TETANUS

- Maternal and Neonatal Tetanus (MNT) is no longer a problem in the South-East Asia Region according to WHO.
- Deaths due to MNT have reduced to 1 in 1000 births at the district level.

- In 1989 it was claiming the lives of 7,87,000 newborns in the world.
- Unhygienic conditions during delivery and inadequate umbilical cord care are the chief causes of the disease in mother and child. It is caused by the bacterium *Clostridium Tetani*.
- Symptoms include lockjaw, muscle spasms, fever, fast heart rate, sweating and high blood pressure.
- Immunisation and enhancing quality maternal and newborn care is critical in the elimination of the disease.



## 4.22. 'GOOD COUNTRY' 2015 INDEX

- 'Good Country' 2015 index, a biannual index, seeks to measure what each country contributes to the common good of humanity, and what it takes away, relative to its size.
- The index takes 35 different UN and World Bank indices into account, including global contributions to science, culture, peace and security, climate change and health and equality.
- **Sweden** is the best country when it comes to serving the interests of its people and contributing to the global good.
- **India** ranked **70th**, three places below China, on a list of 163 nations, with the best ranking (27th) in 'international peace and security' and the worst (124th) in 'prosperity and equality'.
- **Libya** was ranked as the **least "good"** country in the world.

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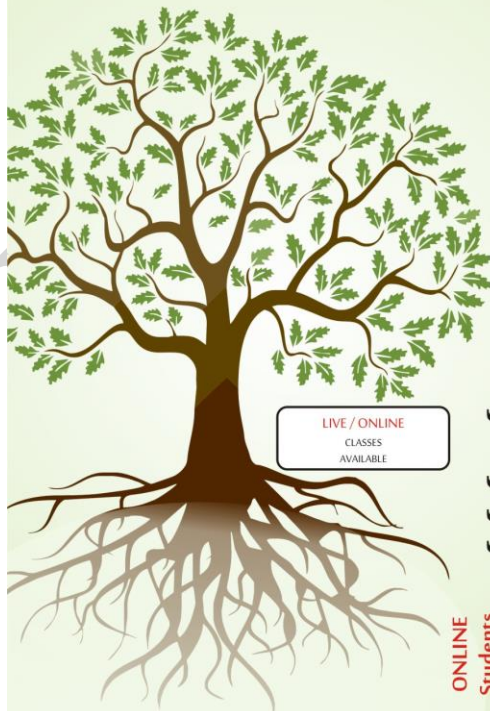
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## 5. SCIENCE AND TECHNOLOGY

### 5.1. EXPLORING METALS IN INDIAN OCEAN



- Cabinet approved signing of a 15 year contract between its Earth Sciences Ministry and the International Seabed Authority (ISA) for undertaking exploration and other developmental activities related to **polymetallic sulphides** in the Indian Ocean.
- The exploration will be done in the allotted area of 10,000 sq km in parts of Central and South - West Indian Ridges (SWIR), in the Indian Ocean.
- The program will be implemented by the Ministry of Earth Sciences with the participation from various national institutes and research laboratories.

#### International Seabed Authority (ISA)

- It is an autonomous international organization established under the 1982 United Nations Convention on the Law of the Sea and the 1994 Agreement relating to the Implementation of its Part XI.
- The Authority has its headquarters in Kingston, Jamaica.
- It was established to organize, regulate and control all mineral-related activities in the international seabed area beyond the limits of national jurisdiction, an area underlying most of the world's oceans.

#### Polymetallic nodules (manganese nodules)

- These are small (from millimetres to tens of centimetres in diameter) lumps of material precipitated from seawater and sediment pore water at slow rates over millions of years and occur mainly on the deep-seafloor.
- They contain approximately 24% manganese, compared to 35-55% manganese in land ore bodies, so they do not offer solid economics as a manganese source, but they also contain iron (14%), copper (>1%), nickel (>1%), and cobalt (0.25%).
- The last three metals together, can make up to 3 wt. %.
- Apart from these metals, nodules include trace amounts of molybdenum, platinum and other base metals.

#### Cobalt-rich ferromanganese crusts

- Cobalt-rich ferromanganese crusts occur at shallower depths of 400 to about 5000 meters in areas of significant volcanic activity.
- The crusts grow on hard-rock substrates of volcanic origin by the precipitation of metals dissolved in seawater in areas of seamounts, ridges, plateaus and where prevailing currents prevent deposition of unconsolidated sediments and occupy large areas on top of these topography highs.
- In many cases, the deposits occur within the exclusive economic zone (EEZ) of the countries.
- Similar in general composition to the polymetallic nodules, cobalt crusts are attracting investment in exploration for higher cobalt percentage (2%), platinum (0.0001%) and Rare Earth Elements (REE) besides Nickel and Manganese.
- Crusts can also contain significant amounts of lead, cerium, molybdenum, and other minor metals including those of the platinum group elements.
- ISA has signed exploration contracts for the crusts with Japan, China and Russia.
- The mining technology for these deposits is more complex than the polymetallic nodules.

#### Polymetallic sulphides (PMS)

- PMS are formed by precipitation of metals leached by hydrothermal fluid as it interacts with the cooler ambient seawater at or beneath the seafloor at hydrothermal vent sites.



- Copper and zinc are the most likely metals to be recovered, but some deposits exhibit significant gold (0–20 ppm) and silver (0–1200 ppm) grades as well.
- Submarine massive polymetallic sulphide bodies are principally found along the earth's major tectonic belts.
- Up to 40% of the known deposits occur at shallower depths in back-arc basins and on submarine volcanic ridges within 200 nautical miles of the coast and within the jurisdiction of national exclusive economic zones (EEZs).

## 5.2. POTASSIUM BROMATE

- The government banned the use of potassium bromate as a food additive following a Centre for Science and Environment (CSE) study that found its presence in bread caused cancer.
- As far as potassium iodate is concerned, it has been referred to a scientific panel.”
- Potassium iodate is also used as a food additive and it too is said to be carcinogenic, it has been also referred to a scientific panel
- A CSE study had found that 84 per cent of 38 commonly available brands of pre-packaged breads, including pav and buns, tested positive for potassium bromate and potassium iodate.
- The two food additives are banned in many countries and are listed as “hazardous” to public health.

According to the CSE, potassium bromate typically increases dough strength, leads to higher rising and gives uniform finish to baked products. Potassium iodate is a flour treatment agent.

## 5.3. HUMAN GENOME PROJECT-WRITE (HGP-WRITE)

### Why in news?

On June 2, 2016, scientists from multiple academic institutions in the US published a perspective in the journal Science proposing a second human genome project, called Human Genome Project-Write (HGP-Write).

The Human Genome Project (HGP) was a large, international and multi-institutional effort that took 13 years [1990-2003] and \$2.7 billion to produce a blueprint of the sequence of genes and spaces between genes that make up a typical human genome.

### Background

- The original Human Genome Project was referred to as HGP-Read.
- HGP-read aimed to “read” a human genome. Many scientists now believe that to truly understand our genetic blueprint, it is necessary to “write” DNA and build human (and other) genomes from scratch.

### What is the Genome Project-write?

- It will be an open, academic, international scientific research project led by a multi-disciplinary group of scientific leaders who will oversee a reduction in the costs of engineering and testing large genomes, including a human genome, in cell lines by over 1,000-fold within ten years,
- They will also be developing new technologies and an ethical framework for genome-scale engineering as well as transformative medical applications.
- The overarching goal of such an effort is to further our understanding of the blueprint for life provided by the Human Genome Project (HGP-read).

### Benefits

Some potential applications include, but are not limited to:



- Growing transplantable human organs, thus saving the lives of thousands of patients globally who die waiting for donated organs from those who die from disease or accidents
- Engineering immunity to viruses in cell lines.
- Engineering cancer resistance into new therapeutic cell lines.
- Enabling high-productivity, cost-efficient vaccine and pharmaceutical development using human cells and organoids that makes precision medicine more affordable and universal.
- Similar to sequencing and computation, DNA synthesis is a foundational technology. HGP-write is therefore expected to accelerate research and development across the spectrum of life sciences, supporting basic research and the development of new bio-based therapies, vaccines, materials, energy sources, and foods.

## 5.4. LIDAR

### Why in News?

**Telangana government** proposes to use LiDAR (Light Detection and Ranging) technology in preparation of high resolution maps for use in various engineering works and projects.

- Lidar is a remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the Earth.
- These light pulses-combined with other data recorded by the airborne system-generate precise, three-dimensional information about the shape of the Earth and its surface characteristics.
- In other words, LiDAR is a remote sensing technology that measures distance by illuminating a target with a laser and analysing the reflected light.
- A LIDAR instrument principally consists of a laser, a scanner, and a specialized GPS receiver.
- LiDAR is highly accurate scientific surface/topographic data with active sensing system and it uses its own energy source, not reflecting naturally or naturally emitted radiation. This mode allows direct acquisition of terrain information.

### Applications

- Use of Lidar technology gives quality data in digital form in a short time. This data can be used in many projects related to roads, canals, surface transport, city planning, landslides, irrigation etc.
- This system can be brought to use for engineering designs, conservation planning, floodplain mapping, surface feature extraction (trees, shrubs, roads and buildings) and vegetation mapping (height and density).

## 5.5. BIONIC LEAF

- A team of scientists from Harvard University has created a unique “bionic leaf” that uses solar energy to split water molecules into oxygen and hydrogen, and hydrogen-eating bacteria to produce liquid fuels.
- Bionic leaf 2.0 can convert solar energy to biomass with 10 percent efficiency - a number far higher than efficiency of photosynthesis in the plant.
- The bionic leaf 2.0 is placed in water and, as it absorbs solar energy, it's able to split the water molecules into hydrogen and oxygen. These can be harvested and used in fuel cells to generate electricity.
- With the help of an engineered bacterium, the hydrogen can also be used to produce liquid fuels.

## 5.6. SPACE TECHNOLOGY FOR ROOFS - CASPOL

- Vikram Sarabhai Space Centre (VSSC), have developed the ceramic-polymer hybrid (CASPOL) that could protect public transport systems and poor men residing in thatched homes from fire accidents.
- The water-based ready-to-coat product was originally developed to protect the rockets from high temperature and fire to which they are exposed during the initial moments of launch.
- Caspol can withstand up to 800 degree Celsius. Seats in automobiles, public transport system and seat cushions of railway coaches can be made fireproof when Caspol is applied.
- Besides its ability to protect against fire and high temperature, Caspol can also make surfaces waterproof.



## 5.7. MALTITOL

- Indian Institute of Science (IISc) has developed a bone reconstruction method similar to Joints of bone.
- They have used maltitol- derived from maltose, a sweetening agent found in most sugar-free foods such as ice-creams.
- Maltitol is combined with other components to make long chain-like structures that become plastic. This is then used to fill in the bone gap caused by fracture, instead of the traditional rod.
- Maltitol would be a huge advantage over metal rods, which do not allow growth of the bone, especially in infants and adolescents. Drugs can also be injected into it for faster healing.

## 5.8. PLANET 9

- Astronomers have claimed that the mysterious Planet 9 may have been stolen from its original star by Sun some 4.5 billion years ago, possibly making it the first exoplanet inside solar system.
- Planet Nine is a hypothetical large planet in the far outer Solar System, the gravitational effects of which would explain the improbable orbital configuration of a group of trans-Neptunian objects that orbit mostly beyond the Kuiper belt.
- The predicted planet would be a super-Earth, with an estimated mass of 10 Earths, a diameter two to four times that of Earth, and a highly elliptical orbit with an orbital period of approximately 15,000 years.

Kuiper belt is a region of solar system beyond the orbit of Neptune, believed to contain many comets, asteroids, and other small bodies made largely of ice.

## 5.9. INDUSTRIAL INTERNET

### What is Industrial Internet?

- IoT's industrial applications are called as the 'Industrial Internet'.
- The Industrial Internet closely linked to enterprise IoT is likely to transform business segments like manufacturing, oil and gas, agriculture, defence, mining, transportation etc.

### How Industrial Internet works?

- The industrial Internet draws together fields such as machine learning, big data, the Internet of things and machine-to-machine communication to absorb data from machines, analyze it (in real-time), and use it to adjust operations.

- The Industrial Internet also is applied to transportation projects, such as driverless cars and intelligent railroad systems.



#### About The internet of things (IoT)

- The internet of things (IoT) is the network of physical devices, vehicles, buildings and other items-embedded with electronics, software, sensors, and network connectivity that enable these objects to collect and exchange data.
- Thus IoT creates opportunities for more direct integration of the physical world into computer-based systems, and resulting in improved efficiency, accuracy and economic benefits.
- IoT is one of the platforms of today's Smart City, and Smart Energy Management Systems. It can also be used to improve crop yield to help feed the world's growing population.

## 5.10. LISA PATHFINDER

### Why in News?

- ESA's LISA Pathfinder mission has demonstrated the technology needed to build a space-based gravitational wave observatory.
- Results from LISA Pathfinder, show that the two cubes at the heart of the spacecraft are falling freely through space under the influence of gravity alone, to a precision more than five times better than originally required to detect gravitational waves.

### About LISA

- LISA would be the first dedicated space-based gravitational wave detector. It aims to measure gravitational waves directly by using laser interferometry.
- The LISA has a constellation of three spacecraft, arranged in an equilateral triangle with million-kilometre arms flying along an Earth-like heliocentric orbit. The distance between the satellites is precisely monitored to detect a passing gravitational wave.
- As a prelude to the massive LISA mission, the smaller LISA Pathfinder was launched by ESA in 2015.

## 5.11. DRAFT GUIDELINES FOR SAFE HANDLING OF NANOMATERIALS

- The **Nano Mission** under the Department of Science and Technology has come out with the draft "Guidelines and Best Practices for Safe Handling of Nanomaterials in Research Laboratories and Industries".
- The guidelines, intended as standard operating procedure (SOP) for handling nanomaterials in research laboratories and industries, prescribe a combination of engineering controls, work practices and personal protective equipment as part of a robust exposure control strategy.
- These lay down the process for identifying hazards, taking note of the specific effect of surface chemistry, shape, size and morphology on toxicity caused to various organs.
- The guidelines also lay down set of best practices related to the making and handling of Nanopowders and use of products relating to food and healthcare.

#### Few Applications of Nanotechnology

- Desalination of water
- Wastewater treatment
- Other Nanoremediation.
- Nanomedicine is being used to treat disease and prevent health issues.
- Nanoparticles are used in sunscreen, cosmetics and food packaging.





### About Nano Mission

- The Govt., in May 2007, has approved the launch of a Mission on Nano Science and Technology (Nano Mission) with an allocation of Rs. 1000 crore for 5 years.
- Capacity-building in this area of research will be of utmost importance for the Nano Mission so that India emerges as a global knowledge-hub in this field.
- It will strive for development of products and processes for national development, especially in areas of national relevance like safe drinking water, materials development, sensors development, drug delivery, etc.

## 5.12. BIO-INK FOR 3D PRINTING

- Scientists have developed a new stem cell-containing bio-ink that allows 3D printing of complex living tissues that may be used for surgical implants.
- The bio-ink contains two different polymer components: a natural polymer extracted from seaweed, and a sacrificial synthetic polymer used in the medical industry.
- The special bio-ink formulation was extruded from a retrofitted benchtop 3D printer, as a liquid that transformed to a gel at 37 degrees Celsius, which allowed construction of complex living 3D architectures.

### Potential Applications of Bio-ink

It can be used for printing complex tissues using the patient's own stem cells for surgical bone or cartilage implants, which could be used in knee and hip surgeries.

### How it works?

- The synthetic polymer causes the bio-ink to change from liquid to solid when the temperature is raised, and the seaweed polymer provides structural support when the cell nutrients are introduced.
- The team was able to differentiate the stem cells into osteoblasts - a cell that secretes the substance of bone - and chondrocytes, cells that have secreted the matrix of cartilage and become embedded in it, to engineer 3D printed tissue structures over five weeks.

## 5.13. COGNITIVE DIGITAL RADIO

- A new app calculator has been found on smart phones of terrorists infiltrating into Jammu and Kashmir which helps them to remain in touch with their handlers in Pakistan occupied Kashmir (PoK) without being detected by technical surveillance by army.
- The technology is based on the concept of cognitive digital radio that enables users to turn their smartphones into peer-to-peer, off-grid communication tools. It was first used by a US-based company during Hurricane Katrina so that the affected could remain in touch with each other.
- The Army's signal unit relies largely on technical intercepts - usage of wireless and mobile phones.

## 5.14. CHINA SETS UP FIRST 'DARK SKY' RESERVE

- China has launched its first "dark sky reserve" for astronomical observation in the Tibetan prefecture of Ngari, bordering Nepal and India.
- The reserve covers an area of 2,500 square kilometres and aims to limit light pollution by stepping up protection of dark-sky resources for education and tourism development.

## Why Ngari is famous?

- Ngari is among the best sites for astronomical observation on earth, due to its high altitude and large number of cloudless days throughout the year.
- However, the recent inflow of people from other areas has given rise to increasing urbanisation, and thus the associated risk of more light pollution.



**Light pollution** is excessive, misdirected, or obtrusive artificial (usually outdoor) light. Too much light pollution washes out starlight in the night sky, interferes with astronomical research, disrupts ecosystems, has adverse health effects and wastes energy.

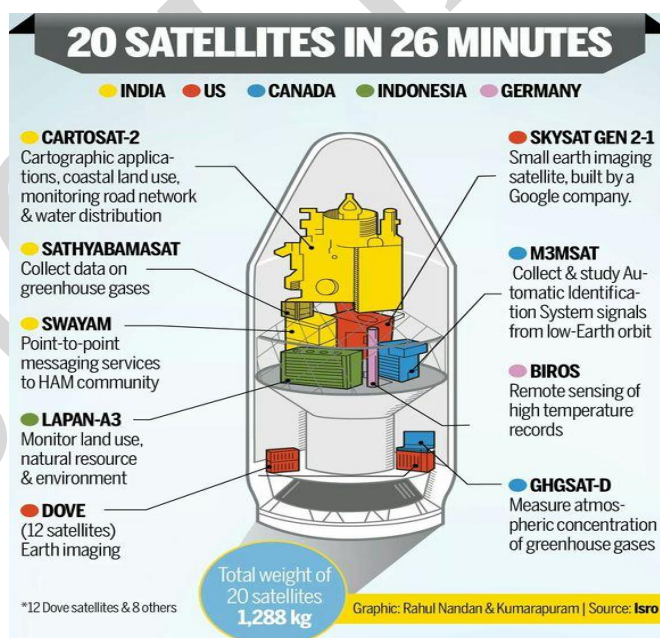
## 5.15. ZIKA VACCINE: DNA VACCINE (GLS-5700)

- The first Phase-1 human clinical trial of a vaccine for the Zika virus is set to begin soon.
- The DNA vaccine (GLS-5700) has already been tested on animals and found to elicit “robust” antibody and T cell responses.
- The human trial will be carried out on 40 healthy adults to evaluate safety, tolerability and immunogenicity and the interim results are expected before the end of the year.

## 5.16. ISRO LAUNCHES 20 SATELLITES

### Why in news?

- ISRO has created a new record of launching 20 satellites from a single rocket, including those of US, Germany, Canada and Indonesia, from the Satish Dhawan Space Center in Sriharikota.
- This has brought India into the elite club of USA and Russia who have also launched more than 20 satellites in a single launch.
- ISRO has broken its own record of launching 10 satellites in 2008.



### About the mission

- The PSLV-34 vehicle was used to launch 3 Indian and 17 commercial foreign satellites.
- Among the 3 Indian satellites there is CARTOSAT-2 series which has potential uses in geological surveying, border management, disaster management etc.
- The other two Indian satellites - SatyabhamaSat and Swayam were made by college students.
- They will be used to collect data on greenhouse gases and provide point-to-point messaging services on earth respectively
- The foreign satellites are LAPAN-A3 from Indonesia, Brios from Germany, M3MSat and GHSSat-D from Canada, SkySat and 12 Dove satellites from US.
- The payload or total weight of all 20 satellites carried on-board is 1288 kg.



### 5.17. SMART PAPER

- Scientists have developed Smart Paper, which is a high-tech polypropylene synthetic paper with sensing capabilities that can respond to gesture commands and connect to the digital world.
- The method relies on small inexpensive radio frequency (RFID) tags that are stuck on, printed or drawn onto the paper to create interactive, lightweight interfaces.
- These interfaces, which turn into sensors, can recognize the specific movements, and classify a signal interruption as a specific command.
- The technology used is PaperID that leverages off-the-shelf RFID tags, which function without batteries but can be detected through a reader device placed in the same room as the tags.
- Through this technology, connecting real-world items such as a paper airplane or a classroom survey form to an Internet of Things environment may be possible.
- This new technique is not limited to use on paper. It is Ideal for safety tags, menus, covers, charts, manuals and baggage tags.

### 5.18. FIRST HOLOGRAPHIC FLEXIBLE SMARTPHONE

- Scientists have claimed to develop the world's first holographic flexible smartphone called HoloFlex that lets users interact with 3D videos/images without any headgear, glasses or other restraints.
- HoloFlex is capable of rendering 3D images with motion parallax and stereoscopy to multiple simultaneous users and features as full HD Flexible Organic Light Emitting Diode (FOLED) touchscreen display.
- Images are rendered into 12-pixel wide circular blocks allowing the full view of the 3D object from a particular viewpoint.
- HoloFlex is also equipped with a bend sensor, which allows the user to bend the phone as a means of moving objects along the z-axis of the display in addition to the usual swiping along X and Y axes using the touchscreen.
- By employing a depth camera, users can also perform holographic video conferences.

### 5.19. ADITYA-L1 SATELLITE FOR SOLAR STUDY

- ISRO is preparing for launching Aditya-L1 satellite for solar studies which is an improvement over the Aditya-1 mission, that was conceived to be launched in a 800 km low earth orbit to study the solar corona.
- A Satellite placed in the halo orbit around the Lagrangian point 1 (L1) of the Sun-Earth system has the major advantage of continuously viewing the Sun without any occultation/ eclipses.
- Therefore, the Aditya-1 mission has now been revised to "Aditya-L1 mission" and will be inserted in a halo orbit around the L1, which is 1.5 million km from the Earth.
- The major scientific objectives are studying solar corona, achieving fundamental understanding of the physical processes that heat the solar corona, accelerating solar wind and producing coronal mass ejections.
- Thus the enhanced Aditya-L1 project will enable a comprehensive understanding of the dynamical processes of the sun and address some of the outstanding problems in solar physics.



## 5.20. EINSTEIN RING

### Why in news?

- Einstein Ring has been discovered at the Instituto de Astrofísica de Canarias in Chile. The team used a spectrograph on the Gran Telescopio CANARIAS to confirm the discovery, which is now being called the "Canarias Einstein ring."

### What is an Einstein ring?

- "Einstein Ring", first predicted by Einstein's theory of General Relativity, is a rarely observed, astronomical phenomenon that occurs when two distant galaxies are perfectly aligned, millions of light years apart.
- It is a distorted image of a very distant galaxy, which is termed 'the source'. The distortion is produced by the bending of the light rays from the source due to a massive galaxy, termed 'the lens', lying between it and the observer.
- When the two galaxies are exactly aligned, the image of the more distant galaxy is converted into an almost perfect circle.

## 5.21. CIRCUMBINARY PLANET

- Scientists, using NASA's Kepler Space Telescope, have discovered a Jupiter-like planet Kepler1647b, orbiting a system of two stars, making it the largest transiting circumbinary planet ever found.
- Planets that orbit two stars are known as circumbinary planets.
- The planet Kepler1647b, located in the constellation Cygnus is 3,700 light-years away and about 4.4 billion years old, roughly the same age as the Earth.
- Like Jupiter, Kepler-1647b is a gas giant, making the planet unlikely to host life.

## 5.22. SILVER DISSOLVED USING GLUCOSE WATER

- IIT Madras researchers have found that silver can slowly dissolve in water if heated to about 70 degree C in the presence of glucose. As much as 0.5 weight per cent of a silver plate can get dissolved in glucose water within a week.
- Like gold, silver is a noble metal and is therefore supposed to be inert (resistant to chemical corrosion, especially to chemical reagents used in daily life).
- But, IIT Madras team found that silver atoms gets released from a plate in a simple, two-step mechanism - silver ions are first formed at the metal surface, which later form specific metal complexes with sugar.
- The team has been studying the effect of metals in food and how toxic metals get into our food chain from soil, water and fertilizers.
- An offshoot of the study is that the method can be used for developing novel and green extraction processes for noble metals. In general, toxic chemicals such as cyanide are used for extracting silver.

## 5.23. BLUE LIGHT EMITTED BY LED IS HARMFUL

- According to a report recently released by the American Medical Association (AMA) Council on Science and Public Health, excessive blue light emitted by light emitting diodes (LED) can adversely impact human health.
- Blue light directly affects sleep by suppressing the production of the hormone melatonin, which mediates the sleep-wake cycle in humans.
- As per the report, compared with conventional street lighting, the blue-rich white LED street lighting is five times more disruptive to sleep cycle.



- Although more research is needed, evidence available suggests a long-term increase in the risk for cancer, diabetes, cardiovascular diseases and obesity caused by chronic sleep disruption due to exposure to blue light.
- The excessive blue wavelength contributes to glare effects as a result of larger scattering in the human eye.
- Glare forms a veil of luminance that reduces the contrast, thus in turn reducing the visibility of a target.
- The report also notes that unshielded LED lighting causes papillary constriction, leading to “worse night-time vision between lighting fixtures.” Intense blue spectrum can even damage the retina.
- As per the report, contrary to the popular notion that bright LED lighting increases road safety, discomfort and disability glare caused by unshielded, bright LED lighting negatively impacts visual acuity, thus “decreasing safety and creating road hazards”.

## 5.24. NEW ELEMENTS ON THE PERIODIC TABLE

- The IUPAC has announced the proposed names for elements 113, 115, 117 and 118: nihonium, moscovium, tennessine and oganesson. The names are on five-month probation before things are made official.
- All four elements are not found in nature, and were synthetically created in laboratories.
- Until now, these elements had temporary names and symbols on the periodic table as their existence was hard to prove. Because they decay extremely quickly, scientists found it difficult to reproduce them.

### IUPAC rules for naming the elements

- Elements are named after a mythological concept or character (including an astronomical object), a mineral or similar substance, a place or geographical region, a property of the element or a scientist.
- They must end in “-ium,” “-ine,” or “-on” depending on the grouping of elements they belong to.
- IUPAC also prefers the names translate easily across major languages.

### About IUPAC

- The International Union of Pure and Applied Chemistry (IUPAC) is the world authority on chemical nomenclature and terminology, including the naming of new elements in the periodic table; on standardized methods for measurement; and on atomic weights, and many other critically-evaluated data.

## 5.25. DRAFT GEOSPATIAL INFORMATION REGULATION BILL, 2016

The draft Geospatial Information Bill plans to bring in a set of legally binding regulations regarding the geospatial information of India.

### What does “geospatial information” mean?

- Geospatial imagery or data acquired through space or aerial platforms such as satellite, aircrafts, airships, balloons, UAVs
- Graphical or digital data depicting natural or man-made physical features, phenomenon or boundaries of the earth
- Any information related thereto including surveys, charts, maps, terrestrial photos referenced to a co-ordinate system and having attributes;



### Permission mandatory

- It will be mandatory to obtain permission from Security Vetting Authority before acquiring, disseminating, publishing or distributing any geospatial information.
- Security Vetting Authority: It grants licenses to organisations/individuals who want to use geospatial data. It will check the content and data provided and make sure it is well within national policies, “with the sole objective of protecting national security, sovereignty, safety and integrity”

### Penalty for violation

- Illegal acquisition of geospatial information of India - Fine ranging from Rs. 1 crore to Rs. 100 crore and/or imprisonment for a period up to seven years.
- Illegal dissemination, publication or distribution of geospatial information of India - fine ranging from Rs. 10 lakhs to Rs. 100 crore and/or imprisonment for a period up to seven years.
- Use of geospatial information of India outside India - Fine ranging from Rs. 1 crore to Rs. 100 crore and/or imprisonment for a period up to seven years.

### Home Ministry vs Department of Science & Technology

The Geospatial Information Regulation Bill, 2016	National Geospatial Policy 2016
• Aims at regulating the use of mapping data	• Aims at encouraging the widespread use of mapping data
• Bans the use of maps without government licence	• Permission needed only when the portion lies under restricted access
• Fines of ₹1 crore-100 crore if a firm or individual uses maps/ geospatial information without permission	• Does not recommend any new prosecution since it says most issues can be covered under existing laws
• Restricts use of maps, collecting aerial images and GPS coordinates by any means without a licence	• Recommends minimal regulation as it says existing laws are enough to deal with security issues
• Bill applicable to any firm or individual creating, using or doing value add to geospatial data. Also applicable to people sharing locations on social media	• The policy is applicable to geospatial data based products, solutions and services offered by governments, private organisations, NGOs and individuals
• No suggestion on how anyone will know what is a sensitive map	• Suggests segregation of maps in three categories: open access, registered access and classified access
• No geospatial data already available can be used without taking a licence from the government	• Geospatial data being disseminated both internationally and nationally to be treated as unclassified and made available by Indian mapping and imaging agencies

## 5.26. MALWARE INFECTION INDEX 2016 (MII 2016)

**Microsoft Asia** announced the launch of its Malware Infection Index 2016 (MII2016), which identifies the key malware threats in the region and ranks markets in Asia Pacific according to how much they are affected. The region is especially vulnerable with emerging markets most at risk of malware threats.

Malware is software that is specifically designed to disrupt or damage a computer system.

## 5.27. GOOGLE STREET VIEW

India has declined to give security clearance to the Internet giant’s Street View service, primarily due to objections raised by the Defence Ministry. The main concern was security of **sensitive defence installations**.

### Google Street View

- Street View is the search giant’s virtual mapping tool that lets users view **360-degree, panoramic** and street-level images across more than 65 countries
- Google has stated Street View’s **usefulness in disaster management and tourism**.

## 5.28. PRITHVI-II MISSILE

India successfully test-fired indigenously developed nuclear capable Prithvi-II missile.

- It is the first missile to be developed by DRDO under India's prestigious IGMDP (Integrated Guided Missile Development Program).
- It was inducted into India's armed forces in 2003.
- It is a surface-to-surface ballistic missile

### Variants of Prithvi

The Prithvi missile project encompassed developing 3 variants for use by the Army, Air Force and Navy.

- **Prithvi I (SS-150)** - Army Version (150 km range with a payload of 1,000 kg).
- **Prithvi II (SS-250)** - Air Force Version (250km range with a payload of 500 kg).
- **Prithvi III (SS-350)** - Naval Version (350 km range with a payload of 1000 kg).

## 5.29. INS KALVARI

- The first of the six indigenous Scorpene-class submarines set out for sea trials.
- Named Kalvari—sea tiger shark—the 66-m-long vessel is set to be inducted later this year.
- The submarines are being built by Mumbai-based Mazagon Docks Limited (MDL) in collaboration with French company DCNS.
- It is part of Project 75I, promulgated under the ambitious “30-year submarine construction plan”, approved by the Cabinet in 1999 to build 24 conventional submarines.

## 5.30. UNDERWATER VIGIL SYSTEM

- The Indian Navy launched a harbour defence system, having an Integrated Underwater Harbour Defence and Surveillance System (IUHDSS) and a Mine warfare data centre (MWDC), which would enhance its surveillance capability and response to security threats at the naval dockyard in Visakhapatnam.
- The IUHDSS is a multi-sensor system capable of detecting, identifying, tracking and generating warnings for all types of surface and underwater threats.
- MWDC will collate, analyse and classify data collected by Navy's Mine Hunting Ships from various ports.
- The creation of the Sagar Prahari Bal, induction of Fast Interceptor Crafts (FICs) and commissioning of the IUHDSS are some of the Navy's measures to strengthen coastal security in a post 26/11 scenario.



## 6. ENVIRONMENT

### 6.1. NATIONAL DISASTER MANAGEMENT PLAN



#### Why in news?

- The plan was unveiled recently. It is the **first major national plan for disaster management**.
- The plan aims to make India disaster resilient and reduces loss of lives.
- It is made keeping in mind the **Sendai Framework and Sustainable Development Goals (SDGs)**.

#### About Sendai framework

- The Sendai Framework is a 15-year non-binding agreement on disaster risk reduction.
- It replaced the earlier Hyogo Framework.
- It was adopted at the Third UN United Nations World Conference on Disaster Risk Reduction held at Sendai, Japan in March 2015.
- It aims for the substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.

#### Major highlights of the plan

- **Comprehensive definition** of disaster
  - ✓ The plan is based on the four priority themes of the “Sendai Framework,” namely:
    - understanding disaster risk,
    - improving disaster risk governance,
    - investing in disaster risk reduction (through structural and non-structural measures);
    - disaster preparedness- early warning and building back better in the aftermath of a disaster.
  - ✓ It covers all phases of disaster management: Prevention, Mitigation, Response and Recovery.
  - ✓ It covers human induced disasters like chemical, nuclear etc.;
- Planning
  - ✓ Planning for short medium and long run respectively 5, 10, and 15 years to deal with disasters.
- Integrating approach with role clarity
  - ✓ It provides for horizontal and vertical integration among all the agencies and departments of the Government.
  - ✓ The plan also spells out the roles and responsibilities of all levels of Govt right up to Panchayat and Urban local body level in a matrix format.
  - ✓ Ministries are given role for specific disasters e.g. Ministry of Earth Sciences is responsible for Cyclones
  - ✓ The plan has a regional approach, which will be beneficial not only for disaster management but also for development planning.
  - ✓ It is designed in such a way that it can be implemented in a scalable manner in all phases of disaster management.
- Major activities
  - ✓ It also identifies major activities such as early warning, information dissemination, medical care, fuel, transportation, search and rescue, evacuation, etc. to serve as a checklist for agencies responding to a disaster.
  - ✓ It also provides a generalised framework for recovery and offers flexibility to assess a situation and build back better.





- Information & media regulation
  - ✓ To prepare communities to cope with disasters, it emphasises on a greater need for Information, Education and Communication activities.
  - ✓ It calls for ethical guidelines for the media for coverage of disasters as well as self-regulation. The plan wants the media to respect the dignity and privacy of affected people.
  - ✓ Also, in a move aimed to stop rumours and spread of panic, the plan directed the authorities to schedule regular media briefing (depending on the severity of the disaster) and designate a nodal officer for interacting with the media on behalf of the government

## 6.2. GYPS VULTURE REINTRODUCTION PROGRAMME

### Why in news?

- Govt of Haryana launched it last year by putting ten captive bred vultures in pre-release aviaries close to Jatayu Conservation Breeding Centre at Pinjore.
- It is Asia's first Gyps Vulture Reintroduction Programme
- Recently, two **Himalayan Griffons** were released in the wild as part of this programme.
- The programme is an ex-situ means of conservation whereby some vultures are kept at the breeding center for some time and then released into the wild.
- As vultures play a vital role in keeping the environment clean, their breeds should be increased and the government should constantly work to increase their numbers.

Mainly four kinds of vultures are found in India

- **Gyps species**- also called Indian vulture, Long-billed, slender billed vulture- Critically endangered
- **Himalayan Griffon**; closely related to Indian Gyps- not endangered; only **Near Threatened**
- **Red-Headed Vulture**- Critically endangered
- **Egyptian Vulture**- Endangered as per IUCN

### Jatayu conservation breeding centre

- It is a facility within **Bir Shikargah Wildlife Sanctuary** for the breeding and conservation of Indian vultures in Pinjore town near Chandigarh, Haryana.

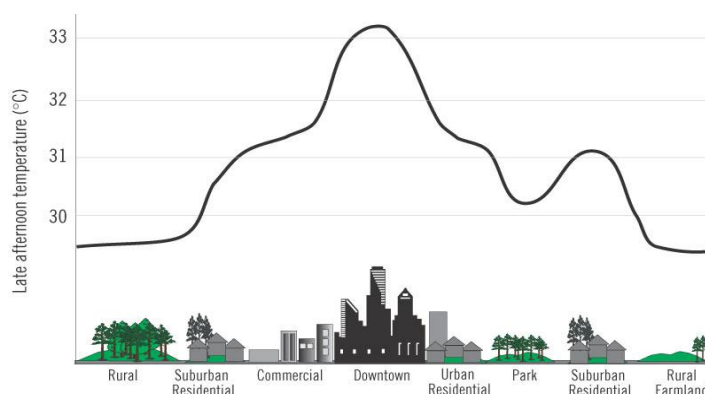
## 6.3. NEW MODEL TO STUDY URBAN HEAT ISLAND

### Why in news?

- A new climate model to study the heat island effect in Abu Dhabi has been developed by researchers. The model, once completed, would help in tackling the effect across the globe.

### About urban heat islands (UHI)

- Urbanization negatively impacts the environment mainly by the production of pollution, the modification of the



physical and chemical properties of the atmosphere, and the covering of the soil surface. Considered to be a cumulative effect of all these impacts is the UHI.



- It is defined as the rise in temperature of any man-made area, resulting in a well-defined, distinct "warm island" among the "cool sea" represented by the lower temperature of the areas nearby natural landscape (figure 1).
- Though heat islands may form on any rural or urban area, and at any spatial scale, cities are favoured, since their surfaces are prone to release large quantities of heat.
- On an average the annual air temperature of a heat island in a city with 1 million people or more can be 1-3°C warmer than its surroundings which goes upto 12°C in evenings.
- Heat islands can affect communities by increasing summertime energy demands, air-conditioning costs, air pollution and greenhouse gas emissions, heat-related illness and mortality
- The major causes are vehicle, dark pavements, multi-storey buildings and ACs. Among these the use of ACs is most adverse as it creates a vicious cycle.
- The effects can be reduced by developing efficient cooling systems, adding vegetation to buildings, cooling paved surfaces with reflective paint etc.

#### 6.4. DRAFT WETLANDS (CONSERVATION AND MANAGEMENT) RULES

- The new draft rules have been recently put into the public domain the government.
- In 2010, MoEF had notified Rules for conservation and management of wetlands under the Environment Protection Act, 1986. The new rules will replace them.

##### Major changes from the old rules

- The Central Wetlands Regulatory Authority (CWRA) will be removed. The power of notification would rest with the chief ministers of respective states.
- There is no time limit for notification as against the period of 12 months stipulated in 2010 rules
- The numbers of restricted activities have been reduced.
- Earlier the decision taken by CWRA could have been challenged before NGT by a citizen. No provision of citizen check is present under the new rules.

#### 6.5. ALTERNATIVE TO BT COTTON

##### Why in news?

- The Union government is working to develop a suite of Bt cotton genes that can be integrated into traditional varieties and be made available to farmers.
- This would be a viable alternative to the current Bt Cotton technology, which is largely sourced from foreign company Mahyco Monsanto Biotech India Ltd.
- It would be a joint collaboration of Council of Scientific and Industrial Research (CSIR) and the Department of Biotechnology (DBT).

##### About Bt Cotton

- Bt Cotton is a genetically modified variety of cotton that contains insecticidal genes sourced from soil bacterium targeted at key cotton pests.
- It is the only GM crop that is legally allowed in India at present. Gm food crops such as brinjal and mustard, which are in advanced stages of regulatory clearances, are yet to become available to farmers due to stringent opposition by anti-GM activist groups.



## 6.6. CARBFIX PROJECT

- Recent reports show that the project was able to solidify 95% of the injected 250 tonnes of CO<sub>2</sub> into calcite in 2 years, using 25 tonnes of water per tonne of CO<sub>2</sub>.
- It is a project in Iceland that aims to lock away CO<sub>2</sub> by reacting it with basaltic rocks.
- Carbonated water is injected into the rocks so that it reacts with Calcium, Magnesium or Silicate material present in Basaltic rocks. This is called enhanced weathering.
- Thus, CO<sub>2</sub> is captured permanently without releasing any harmful by-products.
- Cost of the process is very high.
- Since the reactions are exothermic, it is reversible if the rocks are heated.
- The pumping activity generates seismic activity.

## 6.7. COLLABORATION TO TACKLE CLIMATE CHANGE

- The monitoring of GHG emissions can be done effectively and accurately by space satellites.
- Keeping this mind, 60 space-faring nations have agreed to engage their earth observing satellites, coordinate their methods and data to monitor human-induced GHG emissions.
- They will establish 'an independent, international system' to centralize data from satellites.
- This would help to get the best data possible on climate change with most authenticity.
- The decision was taken at a meeting at New Delhi, called upon at the invitation of ISRO and French space agency Centre national d'études spatiales (CNES).

## 6.8. CLIMATE SMART AGRICULTURE

### Why in news?

Recently the three-day Annual Forum of the Global Alliance for Climate-Smart Agriculture (GACSA) was organised at Rome by FAO.

### About CSA

- Climate smart agriculture (CSA) is an integrative approach to address these interlinked challenges of food security and climate change. It basically **aims at three main objectives**:
  - ✓ sustainably increasing agricultural productivity, to support equitable increases in farm incomes, food security and development;
  - ✓ Adapting and building resilience to climate change at multiple levels; and
  - ✓ Reducing and/or removing greenhouse gas emissions, where possible.
- It is **supported by Food and Agricultural Organisation (FAO)**.

### Elements of CSA

- CSA is not a set of practices that can be universally applied, but rather an approach that involves different elements embedded in local contexts. It relates to actions both on-farm and beyond the farm, and incorporates technologies, policies, institutions and investment.
- CSA approaches include four major types of actions:
  - ✓ Expanding the evidence base and assessment tools to identify agricultural growth strategies for food security that integrate necessary adaptation and potential mitigation

- ✓ Building policy frameworks and consensus to support implementation at scale
- ✓ Strengthening national and local institutions to enable farmer management of climate risks and adoption of context-suitable agricultural practices, technologies and systems
- ✓ Enhancing financing options to support implementation, linking climate and agricultural finance.



## 6.9. SCIENTIFIC DRILLING PROGRAM

- The Union Cabinet has given its approval for membership of the International Continental Scientific Drilling Program (ICDP) consortium by signing an MoU with the Helmholtz Centre Potsdam GFZ German Research Centre for geosciences.
 

The Koyna Dam located in Maharashtra, western India is the most outstanding example of Reservoir Triggered Seismicity (RTS), where triggered earthquakes have been occurring in a restricted area of 20x30 sq km since the impoundment of Shivajisagar Lake in 1962.
- It will enable India to engage with internationally renowned experts with profound expertise in different aspects of scientific drilling in order to accomplish deep drilling and associated investigations in Koyna region.
- This will shed new light on the genesis of seismicity and better understanding of earthquake processes.

### About ICDP

- It is an infrastructure for scientific drilling that facilitates outstanding science.
- It is the only international platform for scientific research drilling in terrestrial environments.
- It provides the means for conducting cutting edge research:
- It brings together scientists and stakeholders from 23 nations to work together at the highest scientific and technical level.

## 6.10. REVIEW OF THE NATIONAL FOREST POLICY

### Why in news?

- The Environment Ministry had tasked the Bhopal-based Indian Institute of Forest Management, an affiliated organisation, with reviewing and revising the existing forest policy.
- This is the first time that the policy was being re-looked since 1988

### Highlights of the study

This study was prepared for 'consideration of the government' and it was funded by **United Nations Development Fund** as well. The major proposals of the study are -

- **Increasing forest cover**
  - ✓ It aims to bring a minimum one-third of India's total geographical area under forest or tree cover through scientific interventions and enforcing strict rules to protect the dense cover.
  - ✓ Replenishing it with **native species** rather than introducing exotic species
- **Carbon tax:** It proposes to levy environmental cess, green tax, carbon tax etc. on certain products and services
- **Diversion of land**
  - ✓ Special caution in case of land diversion projects related to mining, quarrying, construction of dams, roads and other linear infrastructure
  - ✓ Use of state-of-the-art technology which causes minimum pollution.
- **Finance:** It calls for enhancement of the budget of the forestry sector so that objectives enshrined in the this policy can be achieved



- **Eco-tourism:** It calls for developing “sound eco-tourism models” with the focus on conservation while supplementing the livelihood needs of local communities.
- **Implementation:** national implementation framework be put in place within six months of the notification, to deliver on the commitments. It also urged states to formulate their forest policies and prepare an implementation framework.
- **Agro-forestry:** large-scale expansion of agro-forestry and farm forestry through incentives and operational support systems such as lowering input costs and enabling access to reasonably priced quality planting material.

## 6.11. POPLAR TREES IN KASHMIR

- Kashmir is known for its Pine trees. However, the pine forests have diminished significantly in last few decades due to large scale timber extraction.
- In the search for alternative, the Social Forestry Department introduced the *populous deltoids*, or Eastern Cottonwood or more popularly called Poplar.
- **Introduction of the species boosted the veneer and ply-based industry** in the region while its timber, used for fruit-packing boxes, is a cost-efficient option for the horticulture industry, which forms the backbone of the state’s economy.
- The financial benefits offered by growing poplars helped Kashmiri farmers look to agro-forestry as a better means of livelihood.
- In recent years, however, people have been **raising concern over the increased instance of infections caused by the cotton produced by the poplars.**
- As a result, **HC of J&K has ordered the felling of all Poplar trees** in the valley.

## 6.12. PALAEOCHANNEL

### Why in news?

- **Central Ground Water Board (CGWB)** under Ministry of Water Resources, River Development and Ganga Rejuvenation has been putting great emphasis on studying the various aspects of Palaeochannels in India so that its ground water potential can be optimally utilized.

### About Palaeochannel

- It is a **remnant of an inactive river or stream channel** that has been either filled or buried by younger sediment.
- It is distinct from the overbank deposits of currently Active River channels because its river bed is filled with sedimentary deposits which are unrelated to the normal bed load of the current drainage pattern.
- Palaeochannel forms when river channels aggrade, depositing sediment on their bed. For these channel deposits to be preserved, the flow must not re-occupy and re-erode them. For example, when the channel is in a net-depositional environment, or in a subsiding sedimentary basin.

### Importance of Palaeochannel

- **Geological importance**
  - ✓ Understanding movement of faults
  - ✓ Preserving sediments and fossils useful for understanding past rainfall, temperature and climate- this could aid in understanding global warming and climate change as well
  - ✓ Preserving evidences of older Erosional surfaces and levels
- **Economic importance**
  - ✓ The old sediments contain deposits of minerals like Uranium, lignite and precious metals like gold and platinum

- **Ground water source**
  - ✓ Because of better flushing mechanism in the **ground water system of palaeochannels due to coarser nature of sediments and fast recharge**, the quality of ground water is often better than the surrounding environment.



### 6.13. EURSIAN OTTER

- Recently Eurasian Otter were discovered from **Satpura Tiger Reserve, MP and Kanha-Pench Corridor**.
- It was believed to be restricted to Himalayas and in some parts of the Western Ghats.
- It is one of the **rarest Indian mammal**.
- It has wide distribution covering Europe, Africa and Asia. But it is rare in India.
- It is classified as '**Near Threatened**' under IUCN.

### 6.14. DRAFT WIND-SOLAR HYBRID POLICY

#### Why in news?

- The draft National Wind-Solar Hybrid Policy aims at providing a framework to promote large grid connected wind-solar photovoltaic (PV) system for optimal and efficient utilization of transmission infrastructure is criticized for many reasons such as being restrictive and for lacking details about tariffs.

#### Key features of the Policy

- It proposes hybridization of existing solar PV and wind power plants apart from new projects.
- Low cost financing for hybrid projects may be made available through IREDA and other financial institutions like multilateral banks.
- For new hybrid wind-solar projects, the draft policy proposes to provide the developer with the option of using the hybrid power for captive use, third party sale or sale to state electricity distribution utilities.
- Given that critical infrastructure such as land and evacuation network for wind or solar project accounts for about 10-12% of overall project cost, hybrid projects would benefit from common infrastructure.
- The variability in generation profile is likely to be reduced to some extent, as generation from both the sources is at different intervals and in complimentary seasons.

### 6.15. TRANSBOUNDARY MANAS CONSERVATION AREA

- The second monitoring of big cats across the Transboundary Manas Conservation Area (TraMCA) covering Manas National Park (MNP) in Indian side and the Royal Manas National Park (RMNP) in Bhutan has found altogether 21 individual tigers.
- The first monitoring in 2011-12 found 14 individual tigers in the landscape.
- TraMCA, floated in 2008, is a joint initiative of India and Bhutan for trans-boundary biodiversity conservation.

### 6.16. RENEWABLE ENERGY PIPS HYDRO GENERATION

- The renewable energy sector has for the first time surpassed hydro power generation.
- According to the Central Electricity Authority data, the total capacity of renewable energy sector increased to 42,849.38 MW, surpassing the total capacity of

hydropower sector at 42,783.42 MW, out of the nation's total installed capacity of a little over 3 lakh MW on April 30, 2016.

- The renewable energy investments in solar and wind have benefited from a strong central policy and years of early-stage private investment, respectively.
- In contrast, hydropower suffered from multiple challenges, including non-availability of long-term financing; the cost imposed by royalty power (12-36%) offered free to the state govts; and limited opportunities for the private sector.



### 6.17. KARNALA BIRD SANCTUARY

- The National Highways Authority of India (NHAI) is setting aside Rs 58 crore for a plan to mitigate the impact of a road project on the Karnala Bird Sanctuary.
- It is located in Panvel Taluka of Raigad District, outside Mumbai near Matheran.
- The sanctuary is home to over 150 species of resident and 37 species of migratory birds that visit the sanctuary during winter.
- Three rare birds, the **ashy minivet**, **toed kingfisher** and **Malabar trogon** have been sighted here.

### 6.18. FIRST MAMMAL TO GO EXTINCT

- **Melomys rubicola**, a small rat-like animal, may be the first mammal lost to the phenomenon of climate change.
- It is an endemic species found only in the Great Barrier Reef of Australia.
- It is also called Bramble cay melomys because it is found in the Bramble cay, northmost point of land of Australia.
- A **Cay** is a small, low-elevation, sandy island on the surface of a coral reef.
- Researchers say key factor behind extinction was most likely ocean inundation of the low-lying cay, over the last decade, resulting in dramatic habitat loss.

### 6.19. CULLING OF ANIMALS

- Environment Ministry recently provided a spate of clearances allowing culling of nilgai, rhesus monkey, wild pigs etc. as **vermin** in Bihar, HP and Uttarakhand
- This means that those who kill these animals will, for a year, will not be subject to the jail terms and fines that hunting these animals typically invite.
- Wild animals are protected by the Wildlife (Protection) Act, 1972 under which animals and birds are classified, on the basis of threats, into four schedules.
- The highly endangered tiger is in highest **Schedule 1** and **hares in Schedule 4**.
- Each class gets different grades of protection and the law allows all, except Schedule 1 animals, to be temporarily slotted as Schedule 5 or 'vermin.'
- Nilgai, wild pig and rhesus macaque come under schedule 2 and 3.

#### Animal Welfare Board

- It is a statutory advisory body under MoEF advising Govt. on animal welfare laws.
- It was established under Prevention of Cruelty to Animals Act, 1960.

## 6.20. SHAILESH NAYAK COMMITTEE REPORT



- The Report of the Committee to Review the Issues relating to the Coastal Regulation Zone, 2011, was submitted to the Ministry of Environment, Forests and Climate Change in January 2015.
- The ministry has disclosed the report after an order from the Information Commissioner that it cannot deny the report under RTI Act.

### Highlights of the report

- The committee found that the 2011 regulations, especially with regard to construction, have affected the housing, slum redevelopment, redevelopment of dilapidated structures and other dangerous buildings.
- Since 2015, several dilutions appear to be taken from this report, such as
  - Allowing construction of monuments/memorials (Sardar Patel statue in Gujarat) in CRZ VI zones;
  - Proposal to allow high-rise buildings (Chennai) in CRZ II zones within 500 metre of the high-tide line;
  - Proposal to allow reclamation of land from sea (Mumbai) for facilities such as ports, roads, quays, harbours and others.
- The report proposes devolution of powers to state and UT govts along with local bodies.
- Both CRZ II and III zones (500 metres from the high-tide line that are developed and relatively undisturbed, respectively) should not fall under the environment dept., instead be guided by the rules of State town and planning departments.
- It further proposes to reduce the “no development zone” to just 50 metres from existing 200 metres for “densely populated” areas.



“ The Secret To Getting Ahead Is Getting Started ”

## ALTERNATIVE CLASSROOM PROGRAM *for* **GS PRELIMS & MAINS** **2018 & 2019**

Starts: **16<sup>th</sup> August**

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### CSE 2015



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## 7. CULTURE



### 7.1. KIRANA GHARANA

- Kirana Gharana is one of the most prolific Pakistani and Hindustani Khayal gharanas.
- The central concern of the Kirana style is perfect intonation of **notes or swara**, in particular precise tuning and expression of notes.
- Most Hindustani musicians from Karnataka are exponents of kirana gharana, due to efforts of Ustad Abdul Kareem Khan (1872-1937). It has imbibed many features of the Carnatic tradition.
- The border region along Karnataka and Maharashtra is famous for kirana school of singing.

### 7.2. MOHAN VEENA

- Mohan Veena refers to two distinct Indian stringed classical instruments.
- First kind is a **modified Sarod** created by the well know sarod artist Radhika Mohan Maitra and the other is a modified Hawaiian guitar created by Vishwa Mohan Bhatt.
- Bhatt's Mohan Veena is a highly modified concord arch top played lap-style.
- It has nineteen strings and is under tremendous tension. The total strings pull can be in excess of 500 pounds.
- Some variants of Mohan Veena include Chaturangui, Hansa Veena and Shankar Veena.

### 7.3. AFGHANISTAN'S HIGHEST CIVILIAN AWARD

- PM Narendra Modi has been awarded Afghanistan's highest civilian award **Amir Amanullah Khan Award**. He is the first Indian to receive the award
- It is bestowed by the Afghan government to Afghan nationals as well as foreigners in appreciation of their services.
- The award is named after the Afghan national hero, **Amanullah Khan (Ghazi)**-ruler of the Emirate of Afghanistan from 1919-29 who led Afghanistan to independence, modernised Afghanistan and had strong ties with India.

### 7.4. INDO-GREEK CITY EXCAVATED IN SWAT

- A team of Italian and Pakistani archaeologists unearthed layers of an Indo-Greek city in Barikot of Swat valley, Pakistan.
- This site is the only Indo-Greek city excavated on a large scale and one of the few examples of Kushan settlement in South Asia.

#### Background

- The interaction between Greece and the region of Central Asia and South Asia began with the conquest of Alexander the Great in the 4th century BC
- This generated commercial and cultural exchange, and also favored the Greek influence on the Buddhist religion as well as artistic and philosophical schools of later periods.

#### Important Findings



- Large amounts of weapons and coins were found from different layers of the Indo-Greek city.
- There were layers associated with pre-Greek city, the Mauryan settlement (3rd BCE)
- A large late-Kushan Temple with four pillars on the northern part of the excavated area (3rd century CE) was also discovered which confirmed the existence of Buddhist architecture.
- Pottery forms imported from Greek Bactria (ancient kingdom located in Central Asia) and from the Mediterranean in the 2nd century BC were also found.

## 7.5. STONE INSCRIPTION ON KAPALIKAS

- Nearly thousand year old inscription on Kapalikas has been discovered in Raichur, Karnataka.
- The Kapalika tradition is a **non-Puranic Tantric Shaivism** in India.
- Kapalikas are worshippers of **Bhairava** who is a manifestation of Shiva. They were a mysterious cult who may have practiced human sacrifice.
- They are called 'kapalika' or '**skull men**' because they carried skull topped staff.
- The inscription also refers to a 'Kankala Gorava' who had mastered 'Soma Siddantha' or Kapalika Siddantha.

## 7.6. ANTIQUITIES RETURNED

- Recently, US initiated process of returning over 200 stolen artifacts back to India.
- The pieces being returned are only a part of around 3000 artifacts recovered by the US authorities, and will eventually be returned to India.

### Background

- A 1970 **UNESCO Convention on Ownership of Cultural Property** prohibits illicit transfer and trading of ownership of cultural properties including antiquities.
- The process of retrieval of a stolen object that surfaces in a foreign country takes place through India's mission in that country.
- The CBI's Economic Offences Wing deals with heritage crimes. In Tamil Nadu with huge collection of artefacts there is an Idol Wing-CID.

### Stolen Artifacts

- In 2013, a sculpture of Vrishanana Yogini, weighing 400 kg and dating to the 10th century, was brought back from Paris.
- In 2014, Australia returned a Nataraja and an Ardhanariswara.
- In 2015, three idols, Parrot Lady from Canada, Mahisamardini from Germany and Uma Parameshwari from Singapore returned to India.
- Earlier this year, a 10th century buff sandstone slab of the Tirthankara Rishabhanatha and a very rare sandstone panel depicting the equestrian deity Revanta and his entourage dated 8th century AD was discovered in the US.

### Challenges

- The process of registering antiquities under The Antiquities and Art Treasures Act 1972 is extremely cumbersome and the act is outdated also.
- The CAG report on Antiquities in 2013 remarks about the country's poor acquisition, documentation and conservation systems like museums.
- The Ministry of Culture's initiative to document the seventy lakh antiquities in its possession in 2007 has only reached eight lakhs until 2014.



## 7.7. NIHALI LANGUAGE

- As per UNESCO there are 197 endangered languages in India, with 42 classified as Critically Endangered. Included in the list is Nihali Language.

### About Nihali Language

- It is traced to the pre-Aryan and pre-Munda period.
- It is considered a Language Isolate, with no relation with other languages.
- Spoken by some 2,500 villagers on the Maharashtra-Madhya Pradesh border, the language is on the verge of extinction as speakers are migrating to find work, and merging with other communities.

## 7.8. MAHABODHI TEMPLE

### Why in news?

- During the Vesak poya festival in Sri Lanka recently, a **lantern was modeled on the stupa at Mahabodhi temple** and was kept for display near the Gangaramaya temple in Colombo.

### About Mahabodhi temple

- Located at Bodhgaya, Bihar, it marks the location where **Buddha is said to have attained enlightenment**
- **One of the oldest brick structure in eastern India**, it influenced the development of brick architecture over the centuries
- The first temple was built by Emperor Asoka in the 3rd century BC. However, the present temple is of 5th-6th century CE, belonging to the late Gupta period.
- It was declared a **UNESCO World Heritage Site in 2002**.

### About Vesak

- Vesak poya, aka **Buddha Purnima** or **Buddha Day**, is a holiday observed traditionally by Buddhists on different days in Asian countries.
- It **commemorates the birth, enlightenment (nirvana) and death (parinirvana) of Gautam Buddha** in the Theravad or southern tradition.
- The name of the observance represents a month in the Hindu calendar falling in April-May i.e. *Vaishaka*.
- On this day the followers gather and sing hymns in praise of the holy triple gem: The Buddha, The Dharma (his teachings), and The Sangha (his disciples).

## 7.9. BHARATVANI PORTAL LAUNCHED

### What is it?

- A **multilingual knowledge portal**.
- It aims to deliver knowledge about various languages in India using multimedia formats through a portal.
- It is a **project of the Ministry of HRD** and was launched at Lucknow
- It will be **implemented by Central Institute of Indian Languages (CIIL) Mysuru**.

### Salient features

- It will focus on becoming single point source for multiple language learning, content and technology.
- It will be an inclusive, interactive and dynamic platform.
- It is proposed to be **largest language portal** in the world by aggregating multimedia content from all Indian writers, govt. and NGOs
- It will also include a mobile app based multi-lingual dictionary.
- The portal has been launched in 22 scheduled languages, and will be later extended to 100 more languages



## 7.10. 'KA BOM' DRUM

- Traditional drum of **Khasi community in Meghalaya**.
- Prime Minister Narendra Modi tried his hand on the drum while on his visit to Meghalaya at the 65<sup>th</sup> plenary session of North-Eastern Council.

## 7.11. NARIKURAVA TRIBE

### Why in news

- They have recently been included in the Scheduled Tribe category by the union government.
- Narikurava is an indigenous community from the Indian state of Tamil Nadu.
- It is **one of the most socially and educationally backward communities in India**.

### Procedure for inclusion into ST list

- The criteria include indication of primitive traits, distinctive culture, geographical isolation, shyness of contact with community at large and backwardness.
- STs are specified under **A.342** of the Constitution.
- The proposals of the state government/UTs must be agreed upon by the Registrar General of India (RGI) and the National Commission for Scheduled Tribes (NCST).

## 7.12. SULBASUTRAS

- Several Sanskrit texts collectively called Sulbasutras were written by the Vedic Hindus starting before 600 BC. They are written in late Vedic Sanskrit.
- There are four major Sulbasutras namely, Baudhayana, Manava, Apastamba and Katyayana with Baudhayana being the oldest.
- In Sulbasutras, sulba, means a rope or a string. The measurements for geometrical constructions are performed drawing arcs with different radii and centres using a 'sulba'.
- They are vedic appendices to the Kalpasutra family and contain geometry related to fire altar construction.
- For the rituals to be successful the altar had to conform to very precise measurements, so mathematical accuracy was seen to be crucial.
- Unique fire altar shapes were associated with unique gifts from the God. For example those desiring the heaven were to construct a fire altar in the shape of a 'falcon'.
- It is difficult for historians to estimate whether the mathematical information in Sulbasutras was for its own sake like the Greeks did, or was it only for the sake of religious rites.
- Some of the rules like constructing a square with an area equal to a rectangle are exact but rules for constructing a square with an area equal to a given circle are approximations.
- A. Seidenberg in his work "The Origin of Mathematics" has pointed out that while ancient Babylonians possessed knowledge of Pythagoras theorem, it was very basic, it is explicitly stated only in the Sulbasutras later.

## 7.13. FIRST NATIONAL TOURIST CIRCUIT

- The Ministry of Tourism is set to announce the **Buddhist Circuit** as India's first trans-national tourist circuit.

## Background

- The development of Buddhist circuit is part of the **Swadesh Darshan Scheme, announced in 2014** whereby integrated theme based tourist circuits will be developed.
- The themes can include features that are unique and specific to the area and can range from religion, culture, heritage etc.
- The scheme includes the North-East Circuit, Buddhist Circuit, Himalayan Circuit, the Coastal Circuit and the Krishna Circuit.
- In a separate announcement the government also announced another fifty circuits across the country for the development of tourism in the country.



## Buddhist Circuit

- The map of the Buddhist circuit as envisaged by the Ministry includes Bodh Gaya, Vaishali, Rajgir in Bihar, Kushinagar, Sarnath and Shravasthi in UP, along with Kapilavastu and Lumbini in Nepal.

## Bodh Gaya

- Located in Gaya district, Bihar, this is one of the four most important pilgrimage sites for Buddhists. It is the place where Buddha is believed to have attained enlightenment under the Bodhi Tree.

## Vaishali

- It is a district in Bihar named after the ancient city of Vaishali of Mithila mentioned in the Mahabharat. It is important to both Buddhists and Jains.
- It was the capital of Lichchavi dynasty considered one of the first example of a republic in Vriji Mahajanapada.
- Buddha preached his last sermon here before his death in 483 BC. In 383 BC the Second Buddhist Council was convened here.
- It also contains one of the best preserved Ashokan pillars topped by a single Asiatic lion.

## Rajgir

- Located in the Nalanda district of Bihar, it was the first capital of Magadhan kingdom. This too is of importance to both Buddhists and Jains.
- Buddha is believed to have delivered several of his sermons here during his twelve year stay here. Also Buddha is believed to have set in motion his second wheel of law here.
- The first Buddhist Council was also held here.

## Kushinagar

- Kushinagar is in UP. This is where it is believed that Buddha attained Parinirvana.

## Sarnath

- It is located in UP on the confluence of the rivers Ganges and Gomati.
- Here, Buddha first taught the Dharma after attaining enlightenment.

## Shravasthi

- Shravasthi is located near west Rapti river in UP. The ancient city of Shravasthi was the capital of the Kosala.
- It is believed that Buddha spent fourteen Chaturmases (a holy period of four months) here.
- The many old stupas, viharas and temples in the city establish its association with Buddha.



### Kapilvastu

- Kapilvastu is located in southern Nepal. In ancient times Kapilvastu was the capital of the Shakya kingdom where Siddhartha was believed to have stayed with his parents till he left the palace at the age of 29.

### Lumbini

- Lumbini is in the Rupendehi district of Nepal. It is believed by Buddhists to be the place where Queen Maya gave birth to Gautama Siddhartha in 563 BC.
- It became a UNESCO world heritage site in 1997.

## 7.14. KASHMIRI AND NASTALIQ SCRIPT

### Why in News?

The report by MHRD to constitute National Council for Promotion of Kashmiri Language with Devanagari and Sharda as its script led to opposition from the Kashmiri literary community for ignoring the Nastaliq script.

### Kashmiri Language and Nastaliq script

- The Kashmiri language has been facing decline in the state because of the usage of Urdu over Kashmiri.
- Kashmiri is written mostly in Nastaliq script but also in the more ancient Sharda script, and in Devanagari script.
- Sharda is an ancient Western Himalayan script that evolved from the Brahmi script. It was the popular script in the region till the arrival of Nastaliq script along with Islam.
- Nastaliq script is a Arabo-Persian calligraphy script that has been in vogue for the past five centuries and most of the Kashmiri literature is in this script.
- A cursive script, Nastaliq was a combination of the nakshi and taliq styles, featuring elongated horizontal strokes and exaggerated rounded forms.

## 7.15. BIRTH ANNIVERSARY OF SRI RAMANUJA

- In May, India celebrated Sri Ramanujar Sahasrabdi, the seer's 1000th birth anniversary celebrations.

### About Sri Ramanuja

- Ramanuja, born in Tamil Nadu in the 11th century was a Bhakti saint of medieval India.
- He was deeply influenced by the Alvars.
- According to him the best means of attaining salvation was through intense devotion to Vishnu.
- He propounded the doctrine of Vishishtadvaita or qualified oneness in that the soul even when united with the God remained distinct.
- Ramanuja's doctrine greatly inspired the new strand of bhakti, which developed in north India subsequently.

## 7.16. HUMAYUN'S TOMB

### Why in news?

- Experts used traditional craftsmanship with industrial precision to return the gilded finial to 16th century Humayun's Tomb after it was knocked in a storm.
- The 18-ft ornamental ensemble was given a coating of 22-carat gold to match its original splendour.



### About the tomb

- The tomb was built by his widow, **Begha Begum** in **Delhi**.
- The building was constructed with **red sandstone**, edged with white marble.
- This is a synthesis of Persian and Indian traditions, inspired by Syrian and earlier Islamic models.
- It served as an architectural inspiration for Mausoleum of Jahangir at Shahdara, Lahore, as well as the Taj Mahal, at Agra.
- The tomb stands in the centre of a square garden, divided into four parts by causeways ('**charbagh**'), in the centre of which ran shallow water-channels.
- The arched alcoves, corridors and a high double dome as well as the kiosks (chhatris) give it a pyramidal shape from a distance.

## 7.17. SKYES-PICOT AGREEMENT

May 9, 2016 marked the 100 years since the signing of the Sykes-Picot Agreement.

- It was a secret pact between France and Britain, with the assent of Russia, to chop up the Ottoman Empire as their sphere of influence after World War I.
- Mark Sykes and François Georges-Picot were British and French diplomats who negotiated the terms of the agreement.
- The British obtained mandates over Palestine and Iraq; the French got what is now Syria.
- The agreement led to warring communities of Middle East being bundled together as new nations such as Iraq and Lebanon, kicking off the conflicts that still persist.



## 7.18. MOGAO CAVES

- The Mogao caves, hundreds in number in south-east of the Dunhuang oasis, Gansu Province of China are carved into the cliffs above the Dachuan River in the middle of the dry Gobi desert.
- Endowed with wall paintings, painted sculptures, ancient architecture, movable cultural relics and their settings, they describe the epic story of the journey of Buddhism as they were excavated for meditation and as retreats for monks.
- Buddhist cave art, originated in India in the 3rd century C.E., travelled to Dunhuang, a major point of intersection along the Silk Road, and Bamiyan, Kucha-Kizil, Turfan.
- They have an amalgamation of Han Chinese artistic tradition with ancient Indian and Gandharan customs and the arts of the Turks, ancient Tibetans and other Chinese ethnic minorities.
- The Mogao Caves were inscribed on the World Heritage List in 1987.

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**CSE 2013**



**GAURAV AGRAWAL**  
**AIR-1**

**CSE 2014**



**NIDHI GUPTA**  
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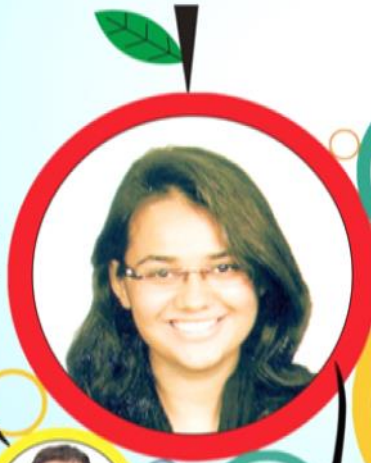


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**TINA DABI**



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