



RAJRAS

Rajasthan Current Affairs  
*of*  
December 2018 – March 2019

*Index*

PERSON in NEWS.....	1
Places in NEWS.....	6
Current Affairs .....	9
Policies, Bills & Schemes.....	16
Vidhan Sabha Election 2018 .....	19
Science & Technology.....	25

PERSON in NEWS

## Persons on Important Posts: Rajasthan

S.No	Post (Rajasthan)	First	Current (2018 Nov)
1	Chief Justice of Rajasthan	Sir Sarat Kumar Ghosh (1949)	Pradeep Nandrajog(32nd)
2	Chief Electoral Officer of Rajasthan		Anand Kumar
3	State Election Commissioner of Rajasthan		Prem Singh Mehra
4	Chief Information Commissioner (CIC)		Suresh Chaudhary
5	RPSC Chairman	Sir DR. S K GHOSH	Deepak Upreti
6	Financial Commission Chairman		Dr. Jyoti Kiran (5th)
7	Advocate General of Rajasthan	G.C. Kasliwal	MAHENDRA SINGH SINGHVI
8	Lokayukta of Rajasthan	ID Dua (1973)	---
9	Rajasthan State Human Rights Commission	<a href="#">Kanta Kumari Bhatnagar</a>	Justice Prakash Chandra Tatia
10	Chief Secretary Rajasthan		D B Gupta
11	Pro-Term Speaker	Maharav Sangram Singh	Gulab Chand Kataria
12	Speaker Vidhan Sabha	Narottam Lal Joshi	Dr. C. P. Joshi
13	Leader of Opposition	Jaswant Singh	Gulab Chand Kataria
14	Governor of Rajasthan	Maharaj Man Singh II (1949) Reorganised 1956 - Gurumukh Nihal Singh	Kalyan Singh
15	Deputy Chairman - Chief Ministers Advisory Council		
16	Chairperson State Commission for Women		---

17	DGP Rajasthan Police		Kapil Garg
----	----------------------	--	------------

### Persons on Important Posts: National

S.No	Post - India	First	Current (2018 July)
1	Comptroller and Auditor General of India (CAG)	V. Narahari Rao	Rajiv Mehrishi
2	Chief Justice of India	H. J. Kania	Ranjan Gogoi (46th)
3	Chief Election Commissioner (CEC)	Sukumar Sen	Sunil Arora
4	Chief Information Commissioner (CIC)	Wajahat Habibullah	Sudhir Bhargava
5	Central Vigilance Commissioner (CVC)	Nittoor Srinivasa Rau	K V Chowdary
6	UPSC Chairman	Sir Ross Barker	Arvind Saxena
7	RBI Governor	Osborne Smith	Shaktikanta Das
8	Lokpal of India	Pinaki Chandra Ghose	Pinaki Chandra Ghose
9	Financial Commission Chairman	K. C. Neogy	Nand Kishor Singh(15th)(2020-2025) Dr. Y. V Reddy (14th )
10	Law Commission Chairman		Balbir Singh Chauhan (21st)
11	National Commission for SC		Ram Shankar Katheria
12	National Commission for ST		Nand Kumar Sai
13	Chairman - National Commission for Minorities		Syed Ghayorul Hasan Rizvi
14	Chairperson, National Commission for backward classes		Bhagwan Lal Sahni
15	National Human Rights Commission - Chairperson		Justice H.L.Dattu
16	Chairperson, National Commission for Women		Rekha Sharma

17	Cabinet Secretary	N. R. Pillai, ICS	Pradeep Kumar Sinha
18	National Security Adviser		Ajit Kumar Doval
19	Attorney General of India		K.K Venugopal
20	Speaker Lok Sabha	G. V. Mavalankar	Sumitra Mahajan
21	Chairman, Atomic Energy Commission		Kamlesh Nilkanth Vyas
22	Chairman, ISRO		Kailasavadivoo Sivan
23	Principal Scientific Adviser		<a href="#">K. VijayRaghavan</a>
24	Chairman, University Grants Commission		D.P.Singh
25	Chairman, Central Water Commission of India		Narendra Kumar
26	Chairman, Securities and Exchange Board of India(SEBI)		Ajay Tyagi
27	Chairman, Insurance Regulatory and Development Authority of India		Subhash Chandra Khuntia
28	Chairman, 7th Pay Commission		Ashok Kumar Mathur
29	Chairman, SIDBI		Muhammad Mustafa
30	Chairman, NABARD		Dr. Harsh Kumar Bhanwala
31	Chairperson, State Bank of India		Rajnish Kumar
32	Chairman, IDBI		Rakesh Sharma
33	Chief Economic Advisor		Krishnamurthy Subramanian
34	Chief of Army Staff		General Bipin Rawat
35	Chief of Air Staff		Air Chief Marshal Birender Singh Dhanoa
36	Chief of Naval Staff		Sunil Lanba
37	Chief of Integrated Defence Staff		Lieutenant General P S Rajeshwar

### Two Farmers from State awarded Padma Shri

- **Hukumchand Patidar** from Manpura, Jhalawar and **Jagdish Chand Pareek** from Ajitgarh, Sikar have been awarded with Padma Shri for using and promoting organic farming. Both these farmers never used a drop of chemical fertilizer and have now become examples for other farmers in the state.

### Mahendra Singh Singhvi

- Mahendra Singh Singhvi has been appointed as the new Advocate General of Rajasthan.

### Kapil Garg

- Kapil Garg has been appointed as the new DGP of Rajasthan Police.

### C.P. Joshi:

- C.P Joshi was appointed Speaker of Vidhan Sabha

### Gulab Chand Kataria

- Gulab Chand Kataria will be appointed as the new *Leader of Opposition* of Rajasthan [Vidhan Sabha](#).
- Additionally, he has also been appointed as the *Pro-term speaker* for 15th Vidhan Sabha.
- **Important:** Governor Administers Oath to Pro-Term Speaker in Vidhan Sabha and then he/she administers oath to new members of Vidhan Sabha.

### Aarti Dogra

Aarti Dogra, district election officer of Ajmer was felicitated by President Kovind for encourage the differently able people of the district to cast votes and take part in the democratic exercise to elect the representatives to the State Assembly.

**Priya Sharma**

Priya Sharma from Jhunjhunu in Rajasthan became the seventh female fighter pilot after passing out of Indian Air Force Academy, Dundigul. She is the third fighter pilot from state after Mohana Singh and Pratibha.

**Nitesh Poonia**

- Churu's Nitesh Poonia broke the under-18 boys hammer throw National record by a massive six metres, taking it from 75.45m to 81.47m, in the 34th National junior athletics championships in Ranchi.

**Priya Punia**

- 22-year-old cricketer from Churu in Rajasthan Priya Punia has been selected for the women Indian cricket T-20 team.

**Tejraj Singh**

- Rajasthan State Sports Council's (RSSC) public relation officer Tejraj Singh was appointed state commissioner of Rajasthan State Bharat Scouts and Guides (ITC and Sports).

**Justice Ajay Rastogi**

- Justice Ajay Rastogi was appointed as Judge of Supreme Court of India on 2 November 2018.
- He practiced as advocate in Rajasthan High Court and was appointed as an Additional Judge of the Rajasthan High Court. Subsequently, he was appointed as Chief Justice of the of the Tripura High Court.

**Asian Paralympics, Jakarta Indonesia**

- Sundar Singh Gurjar won Silver medal in javelin throw and bronze medal in discus throw in Asian Para Games 2018.
- Sandeep Maan Singh from hanumangarh, won bronze medal in In the T45/46/47 classification for men's 400m

## Places in NEWS

### **Titanwala Museum**

The 'Titanwala Museum' in Bagru, Rajasthan was inaugurated to preserve the art of traditional Bagru block printing.

#### **About Bagru Block printing**

- It is a traditional technique of printing with natural colour done by the Chippa community in Bagru village of Rajasthan.
- Traditionally, motifs printed at Bagru are large with bold lines.
- The motifs include wild flowers, buds, leaves and printed geometrical patterns.
- The main colors used in Bagru are Red and Black.

#### **Some other important traditional block printing techniques in India**

- Gujarat: Ajrakh Print
- Rajasthan: Sanganeri, Ajrakh, Dabu
- Madhya Pradesh: Bagh Print, Bherogarh Print (Batik)
- Andhra Pradesh: Kalamkari

### **Mahajan Field Firing Ranges (MMFR), Bikaner**

- The 12-day long joint exercise between the Special Forces of of the Sapta Shakti Command and troops of the US Pacific Command Special Forces known as **Vajra Prahar**, took place at Mahajan Field Range, Bikaner.

### **Phulera, Jaipur**

- The railways will conduct trials of its new trains and technology on a 40-km exclusive testing track between Phulera & Jaipur in Rajasthan, which has now been given the status of a 'special railway project' by the Centre.



### Mandawar, Rajsamand

- Mandawar Panchayat in [Rajsamand](#) district became Rajasthan's third alcohol free gram panchayat.
- Kaachbali ([Rajsamand](#)) was the first & Rojda ([Jaipur](#)) was the 2nd Panchayat to become alcohol free.

### Durga Energy, Dungarpur

- Dungarpur Renewable Energy Technologies Private. Limited ([Durga Energy](#)) located at Dungarpur, Rajasthan is India's first [Solar](#) Module manufacturing plant that is fully owned and operated by local tribal women.
- The company is jointly owned by four Cluster Level Federations of women self-help groups from [Dungarpur](#).
- The project is a joint initiative of Indian Institute of Technology, Bombay (IITB) and Rajasthan Grameen Ajeevika Vikas Parishad (RAJEEVIKA).

### Olives in Rajasthan

- Olive oil refinery: Lunkaransar, Bikaner
- Olive Green Tea production: Bassi, Jaipur

### Ramgarh, Alwar

- Due to unfortunate death of BSP candidate Laxman Singh, Vidhan Sabha By-Poll election will now be held on January 28.

### Ease of Moving Index 2018

- In Nov 2018, Ola's mobility institute released the Ease of Moving Index 2018.
- While, Kolkata ranked first in terms of affordability of public transport and Delhi's transport has been found to be most comfortable, Rajasthan's **Jaipur** secured first place in condition of *footpaths for its pedestrians*.

### **Jaipur Literature Festival**

Oxford dictionaries declared "Nari Shakti" as the Hindi Word of the Year 2018 in a session at the Jaipur Literature Festival (JLF) at the Diggi Palace.

## Current Affairs

### State Finance Commission Submits Report

Rajasthan Finance Commission Chairperson Jyoti Kiran submitted the report of the Fifth Finance Commission to Governor Kalyan Singh at Raj Bhawan. With this, the term of the commission ends on 30 November 2018.

### Native Tree Species Bank

- India's first seed bank of native trees species for Thar desert will be set up in [Jodhpur](#) under project Maruvan (dessert forest).
- The seed bank will be created of all these native trees species which are fast vanishing to preserve them for future. This will be done by procuring seeds with the help of tribal communities and villagers who have been protecting sacred grooves or mini forests where the last remnants of these tree species are still intact.
- The native tree species play a crucial role as front frontier in containing further expansion of desertification and the related damaging impact of climate impact in the Thar desert.
- The introduction and massive plantation of invasive species, Vilayati Keekar (Prosopis Juliflora), for firewood in 1970 has replaced native species and expanded like wildfire but now with people resorting to other fuel resources, this has become a menace. The project aims for revival of native species and preservation of healthy gene pool of seeds, the healthy forests can be recreated in the Thar desert.

### Food Delivery Startup to promote Voting

- The district administration of Bhilwara has roped in online food delivery app Zomato to promote voting in the Lok Sabha polls scheduled in the city.

## 20 Districts of Rajasthan to get Piped Natural Gas

- 20 Districts have been granted authorization for the development of city gas distribution (CGD) system.
- Union Ministry of Natural Gas auctioned the work in two rounds (13 districts in 9th CGD round and 7 districts in 10th round).
- Till Oct 2018, Kota was the only city in the state authorised for retail gas activities (CNG & PNG) which was developed as a model city by introducing various innovative measures by Rajasthan government's agency, Rajasthan State Gas Limited (RSGL)

Districts	Authorized Company
<ul style="list-style-type: none"> <li>• Barmer,</li> <li>• Jaisalmer</li> <li>• Jodhpur</li> </ul>	Consortium of LNG Marketing Pvt Ltd & Atlantic Gulf & Pacific (AG&P)
<ul style="list-style-type: none"> <li>• Alwar (other than Bhiwadi),</li> <li>• Jaipur,</li> <li>• Kota (except area already authorized),</li> <li>• Baran</li> <li>• Chittorgarh (only Rawatbhata block)</li> </ul>	Torrent Gas Pvt Ltd
<ul style="list-style-type: none"> <li>• Bhilwara</li> <li>• Bundi</li> <li>• Chittorgarh (other than Rawatbhata)</li> <li>• Udaipur</li> </ul>	Adani Gas Limited
<ul style="list-style-type: none"> <li>• Dholpur</li> </ul>	Essel Gas Company Limited
<ul style="list-style-type: none"> <li>• Banswara</li> <li>• Dungarpur</li> <li>• Jalore</li> <li>• Sirohi</li> </ul>	Gujarat Gas Limited
<ul style="list-style-type: none"> <li>• Ajmer</li> <li>• Pali</li> <li>• Rajsamand</li> </ul>	IGL

### Barmer Ranks top in Per Capita Income in State

- Once considered the 'Kala Pani' of Rajasthan, [Barmer](#) has ranked 1 in the highest per capita income in the state.
- The per capita income of Barmer district touched Rs 1.28 lakh (at constant prices), which is 36% higher than the national average of Rs 82,226 in 2016-17.
- **Contribution to State GDP:** [Jaipur](#) occupies first position, followed by [Barmer](#) and then [Alwar](#). Barmer has replaced the industrialized Alwar to claim second position.

Parameter	Per Capita Income 2016-17 (in INR)
Jaipur	89,731
Barmer	1,28,226
Rajasthan	69,730
India	82,229

### Reasons for Barmer's rise:

- The rise of district's income can be majorly attributed to the discovery and production of crude oil.
- The share of industry sector in Barmer's economy has shot up as high as 72.55% followed by the service and agriculture sectors contributing 19.33% and 8.12%, respectively.
- Cairn India is producing 24% of India's crude from the district.
- The government, which is receiving about Rs 10 crore as oil royalty daily has also started spending on social infrastructure.

### EC Specifies colour code to identify vehicles

- In a bid to curb misuse of vehicles during the Lok Sabha elections, the Election Commission in a fresh directive stated that it would issue stickers of different colours for identification of the vehicles to be used by candidates, political parties and poll officers.
- The election department has allotted:
  - Red colour sticker for the star campaigners
  - Purple for the state leaders and political parties.
  - White for the vehicles that carry publicity material for the election.
  - Green for vehicles meant for the candidates and party workers.
  - Blue for the district-level election officials and on the day of election it would be yellow.
  - Brown for the vehicles to carry poll material.

The Vehicles will have stickers of above colour codes for easy identification.

The ECI's latest data on political parties show that presently there are 2,293 political parties in the country. They also include 7 "recognised national" and 59 "recognised state" parties.

### Jaipur has highest number of registered unemployed

- The National Career Service (NCS) data of the ministry of labour and employment shows that Jaipur has the highest number of unemployed persons in the state, 58,893.
- With 3188, Jaisalmer has the lowest number of unemployed persons registered with the NCS.
- According to the data, the total number of registered job seekers in the state are 6.89 lakh (up to Feb, 2019) but there are only 27,535 job vacancies available which is just 3.99% of the total job seekers.
- The total number of voters in the age group 18-19 is 12.82 lakh in Rajasthan.
- Unemployed persons can go and register to seek job at National Career Service Portal.

**NGT puts 20 crore fine on Rajasthan government for inaction on Bandi river pollution**

- The National Green Tribunal gave the Rajasthan government a fine of Rs 20 crore for failing to control pollution in the Bandi river by local textile industries.
- The bench directed the Rajasthan chief secretary to deposit the money as an interim amount within one month towards environment compensation to the Central Pollution Control Board, which may be recovered from the polluters.
- Additionally, the bench directed agriculture secretary to get an assessment done on loss of agriculture to the farmers due to the damage caused to agriculture land by use of contaminated water of the Bandi river, suggesting compensation to the farmers.
- The tribunal asked the state pollution control board to ensure that no industrial and sewage effluent is discharged into the river (even treated) and instead, it should be utilised by the industries.
- A study of surface and groundwater in Pali, conducted by the Centre for Science and Environment in 2008, had found almost 80 percent of the sample water unfit for drinking. The samples showed high alkaline and chemical oxygen demand levels, indicating dangerous levels of organic pollutants. The quantity of total dissolved solids was four times higher than the standard.
- The case was transferred to the NGT from the Jodhpur High Court in 2012.

**About Bandi River**

- The Rivers Khari and Mithai meet at pickup weir of Bombadra. This confluence gives rise to the Bandi River.
- After flowing for about 45 km, it joins the Luni near the Lakhar village.
- The Hemawas dam is located near Hemawas on this river.
- The district headquarters [Pali](#) is located on the bank of Bandi.

### State Toll-Free Voters Helpline

- On the occasion of the 9th National Voters' Day (**25th January**), chief electoral officer of the state, Shri Anand Kumar launched a toll free voter helpline number '1950' in the state to ensure voters' convenience.

### State's first Pediatric Cath lab

- State's first and northern India's third paediatric Cath lab is coming up in [Jodhpur](#).
- For this purpose Rs 5 crore have been sanctioned to S N Medical College for the purpose under National Child Health Program and additional Rs 10 lakh have been sanctioned by MP (Jodhpur) Gajendra Singh Shekhawat from MPLAD Fund.
- In Northern India, only AIIMS, Delhi and PGI, Chandigarh have the paediatric cath lab.

### Rajasthan Roadways at Loss

- The loss of Rajasthan Roadways has reached mark of Rs 3,160 crore and a committee of officials and employees & representatives has been formed to find ways to resolve this situation.

### College Awarded for Model on doubling farm income

- The College of Technology and Engineering ([CTAE](#)) in [Udaipur](#) has been awarded by vice-president Venkaiah Naidu in New Delhi for developing a 'farm model' for doubling the income of the farmers.
- The agricultural department of the college has practically demonstrated the 'model' in five villages of Gogunda tehsil of Udaipur by introducing integrated farming system and water resources development—innovative and technological interventions.
- The project was funded by Udaipur MP Arjun Lal Meena under the Adarsh Gram Yojna.



### Rajasthan improves on Sex Ratio at Birth

- The state has improved marginally in Sex Ratio at birth. When compared to 2015, the SRB in 2018 has improved by 19, which suggests an increase of 19 more girls born against 1,000 boys in 2018 in comparison to 2015.
- In 2015-16, there were 929 girls born against 1000 boys, which rose to 950 girls born against 1000 boys in 2018.
- As per the PCTS report, Tribal area of [Banswara](#) has the highest sex ratio at birth which is 1003 girls per 1000 boys in 2018.

### Rajasthan Tourism New Slogan

The Rajasthan Tourism department has replaced the tourism slogan 'Jaane Kya Dikh Jaye' with the state's old tourism slogan 'Padharo Mhare Desh'. The state Tourism Department has also added 'Rajasthan - The incredible state of India' in the department logo, along with 'Padharo Mhare Desh.'

## Policies, Bills & Schemes

### 1% increase in quota for disabled persons

- The draft for increase in reservation for disabled persons from present 3% to 4% has been sent to new State Cabinet for consideration.
- The categories that fall under persons with disabilities include: blindness and low vision, deaf and hard of hearing; locomotor disability including cerebral palsy, leprosy cured, dwarfism, acid attack victims and muscular dystrophy; autism, intellectual disability, specific learning disability and mental illness.

### New Bill: Introduced to Scrap educational qualifications in Panchayats

- Deputy chief minister Sachin Pilot introduced a bill to scrap minimum education qualification for contesting panchayat elections in Rajasthan in the state assembly.
- In 2015, the previous government had introduced education condition, which required a candidate to pass Class X for contesting zila parishad or panchayat samiti elections. For contesting elections for Sarpanch of a panchayat in scheduled and other than scheduled areas, it was mandatory to pass Class V and VIII respectively.
- The State Cabinet, Rajasthan approved Panchayati Raj (Amendment) Bill, 2019 considering that the provisions of educational qualification create unreasonable restriction on the right of people to contest election at the grassroots level.

### Recruitment of Gram Rakshaks

- The State Government of Rajasthan is planning to recruit 40,000 youths as 'gram rakshaks' who will facilitate the villagers on the welfare schemes run by the state government for them.
- As per [NEWS by TOI](#), The state government is planning to pay a remuneration of Rs 4,000 per month to those getting appointment as Gram Sewaks.
- The appointment of these gram rakshaks would be for two years.

### 29 Lac applications for PM-Kisan Initiative

- 29 lakh farmers in Rajasthan have already applied for Union Govt.'s Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) scheme.
- **PM-KISAN** is an initiative by the government of India under which small and marginal farmers who have less than 2 hectares of landholding will get up to Rs 6,000 per year as minimum income support. The amount will be paid to each eligible farmer in three instalments (Rs. 2000 each) and will be deposited directly to their bank accounts.
- Additionally, over 21 lakh names have been already uploaded on the farm loan waiver portal, which was announced by the recently elected state government.

### Anemia-Mukt Rajasthan

Anemia Mukt Rajasthan Campaign has been launched to improve the quantity of hemoglobin in children, adolescents and pregnant women in the state. Under this, children from 6 months to 49 years of age will get medicines to meet the shortage of hemoglobin in the blood.

State Chief Minister Mr. Gehlot launched the Campaign on 30th January from Jodhpur.

#### State of Anemia in Rajasthan:

According to doctors, the amount of hemoglobin in men should be 12 to 16 per-cent and in women 11 to 14 per-cent.

Percentage of Anemic Cases found:

Category	NFHS-3	NFHS-4
6 to 59 months of age	69.7 percent	60.3 percent
Teens and Girls from 15 to 19 Years	53.9 percent	49.1 percent
15 to 49 year old woman	53.1 percent	46.8 percent
15 to 49 years old pregnant	61.7 percent	46.6 percent

### Old-Age pension Scheme

The State government has decided to provide Rs 1,000 monthly pension (was 750 earlier) to small and marginalized farmers above 75 years of age. The government will also provide Rs 750 monthly pension (was 500 earlier) to small and marginalised women farmers above 55 years of age and male farmers above 58 years respectively without any regular source of income.

### Rajasthan Lokayukta's tenure cut to 5 years

The Rajasthan government has reduced the tenure of the Lokayukta to five years from eight years, through the Rajasthan Lokayukta and Up-Lokayukta (Amendment) Ordinance, 2019.

Since the present Lokayukta, Sajjan Singh Kothari, has already completed six years in office, his term has come to an end with the amendment ordinance coming into force.

## Vidhan Sabha Election 2018

- 15<sup>th</sup> Vidhan Sabha elected
- [Ashok Gehlot](#) elected Chief Minister for third time: 1998-2003, 2008-2013, 2018-
- Voters:
  - State had 4,77,89,441 registered voters
  - [Rajasthan](#) recorded **74.71% voting**, which was 0.54% less than from [Vidhan Sabha Elections 2013](#) (75.23%).
  - Maximum turnout was 88.03% in Pokhran constituency.
- NOTA Votes
  - Cast in State: 500275 - which is 1.4% of total votes
  - In 2013, 5,36,267 votes were to NOTA
  - Maximum NOTA votes in Kushalgarh Constituency.
  - Minimum NOTA votes in Ramgarh Constituency.
- Win-lose
  - Kailash Meghwal won by maximum vote difference (74,542)
  - Jhabhar Singh won by least margin (152 votes)
- Representation
  - 24 Female MLA's got elected (12%).

*\* Data Source: Election Commission Rajasthan*

**Summary:**

S.No.	Name of Party	Seats	Percentage of Votes
1	Indian National Congress	100	39.30%
2	Bhartiya Janta Party	73	38.80%
3	Independent	13	9.50%
4	Bahujan Samaj Party	6	4%
5	Rashtriya Loktantrik Party	3	2.40%
6	Communist Party of India (Marxist)	2	1.20%
7	Bhartiya Tribal Party	2	0.7%
8	Rashtriya Lok Dal	1	0.3%
			2.5% (Other Parties & Candidates)
			1.3% (NOTA)
	<b>Total Seats</b>	200	100%

\* The Indian National Congress won the Rajasthan assembly election held on January 28 for the Ramgarh seat in the Alwar district. The election was deferred after the death of Bahujan Samaj Party (BSP) candidate Laxman Singh days before the state assembly polls scheduled on December 7, 2018. Shafia Zubair Khan got elected as MLA.

**Portfolio: 15th Rajasthan Vidhan Sabha**

Sl. No.	Name	Department
1	Sh. Ashok Gehlot	<ul style="list-style-type: none"> <li>• Finance Dept.,</li> <li>• Excise Dept.,</li> <li>• Planning Dept., Policy Planning Dept.,</li> <li>• Dept. of Personnel, General Administration Dept., Raj.</li> <li>• State Investigation Bureau,</li> <li>• Information Technology &amp; Communication Dept.,</li> <li>• Home Affairs &amp; Justice Dept.</li> </ul>
2	Sh. Sachin Pilot	<ul style="list-style-type: none"> <li>• Public Works Dept.,</li> <li>• Rural Development Dept.,</li> <li>• Panchayati Raj Dept.,</li> <li>• Science &amp; Technology Dept.,</li> <li>• Statistics Dept.</li> </ul>

**Cabinet Ministers:**

Sl. No.	Name	Department
1	Sh. Bulaki Das Kalla	<ul style="list-style-type: none"> <li>• Energy Dept.,</li> <li>• Public Health &amp; Engineering Dept.,</li> <li>• Ground Water Dept.,</li> <li>• Art, Literature, Culture &amp; Archeology Dept.</li> </ul>
2	Sh. Shanti Kumar Dhariwal	<ul style="list-style-type: none"> <li>• Local Self Government,</li> <li>• Urban Development &amp; Housing Dept.,</li> <li>• Law &amp; Legal Affairs and Legal Consultancy Office,</li> <li>• Parliamentary Affairs Dept.</li> </ul>

3	Sh. Parsadi Lal	<ul style="list-style-type: none"> <li>• Industry Dept.,</li> <li>• State Enterprise Dept.</li> </ul>
4	Master Bhanwarlal Meghwal	<ul style="list-style-type: none"> <li>• Social Justice and Empowerment Dept.,</li> <li>• Disaster Management &amp; Relief Dept.</li> </ul>
5	Sh. Lalchand Katariya	<ul style="list-style-type: none"> <li>• Agriculture Dept.,</li> <li>• Animal Husbandry Dept.,</li> <li>• Fisheries Dept.</li> </ul>
6	Sh. Raghu Sharma	<ul style="list-style-type: none"> <li>• Medical &amp; Health Dept.,</li> <li>• Ayurved &amp; Indian Medical Dept.,</li> <li>• Medical &amp; Health Services (ESI) Dept.,</li> <li>• Information &amp; Public Relation Dept.</li> </ul>
7	Sh. Pramod Bhaya	<ul style="list-style-type: none"> <li>• Mines Dept.,</li> <li>• Gopalan Dept.</li> </ul>
8	Sh. Vishvendra Singh	<ul style="list-style-type: none"> <li>• Tourism Dept.,</li> <li>• Devasthan Dept.</li> </ul>
9	Sh. Harish Choudhary	<ul style="list-style-type: none"> <li>• Revenue Dept.,</li> <li>• Colonization Dept.,</li> <li>• Command Area Development &amp; Water Utilization Dept.</li> </ul>
10	Sh. Ramesh Chand Meena	<ul style="list-style-type: none"> <li>• Food and Civil Supplies Dept.,</li> <li>• Consumer Affairs Dept.</li> </ul>
11	Sh. Anjana Udaylal	<ul style="list-style-type: none"> <li>• Co-operative Dept.,</li> <li>• Indira Gandhi Nahar Pariyojana (IGNP) Dept.</li> </ul>
12	Sh. Pratap Singh Khachariyawas	<ul style="list-style-type: none"> <li>• Transport Dept.,</li> <li>• Soldier Welfare Dept.</li> </ul>
13	Sh. Shale Mohammad	<ul style="list-style-type: none"> <li>• Minority Affairs Dept.,</li> </ul>



		<ul style="list-style-type: none"> <li>• Waqf Dept.,</li> <li>• Public Grievances Redressal Dept.</li> </ul>
--	--	--

**State Ministers:**

Sl. No.	Name	Department
1	Sh. Govind Singh Dotasara	<ul style="list-style-type: none"> <li>• Education (Primary and Secondary Education) Dept. (Independent Charge),</li> <li>• Tourism Dept.,</li> <li>• Devasthan Dept.</li> </ul>
2	Smt. Mamta Bhupesh	<ul style="list-style-type: none"> <li>• Women and Child Development Dept. (Independent Charge),</li> <li>• Public Grievances Redressal Dept.,</li> <li>• Minority Affairs Dept.,</li> <li>• Waqf Dept.</li> </ul>
3	Sh. Arjun Singh Bamniya	<ul style="list-style-type: none"> <li>• Tribal Area Dept. (Independent Charge),</li> <li>• Industries Dept.,</li> <li>• State Enterprises Dept.</li> </ul>
4	Sh. Bhanwar Singh Bhati	<ul style="list-style-type: none"> <li>• Higher Education Dept. (Independent Charge),</li> <li>• Revenue Dept., Colonization Dept.,</li> <li>• Command Area Development &amp; Water Utilization Dept.</li> </ul>
5	Sh. Sukhram Vishnoi	<ul style="list-style-type: none"> <li>• Forest Dept. (Independent Charge),</li> <li>• Environment Dept. (Independent Charge),</li> <li>• Food &amp; Civil Supplies Dept.,</li> <li>• Consumer Affairs Dept.</li> </ul>
6	Sh. Ashok	<ul style="list-style-type: none"> <li>• Youth Affairs &amp; Sports Dept. (Independent Charge),</li> <li>• Skill, Employment &amp; Entrepreneurship Dept. (Independent Charge),</li> </ul>

		<ul style="list-style-type: none"> <li>• Transport Dept.,</li> <li>• Soldier Welfare Dept.</li> </ul>
7	Sh. Tikaram Jully	<ul style="list-style-type: none"> <li>• Labour Dept. (Independent Charge),</li> <li>• Factories &amp; Boilers Investigation Dept. (Independent Charge),</li> <li>• Co-operative Dept.,</li> <li>• Indira Gandhi Nahar Pariyojana (IGNP) Dept.</li> </ul>
8	Sh. Bhajanlal Jatav	<ul style="list-style-type: none"> <li>• Home Guards and Civil Defense Dept. (Independent Charge),</li> <li>• Stamps &amp; Stationary Dept. (Independent Charge),</li> <li>• Agriculture Dept.,</li> <li>• Animal Husbandry Dept.,</li> <li>• Fisheries Dept.</li> </ul>
9	Sh. Rajendra Singh Yadav	<ul style="list-style-type: none"> <li>• Planning (Manpower) Dept. (Independent Charge),</li> <li>• State Motor Garage Dept. (Independent Charge),</li> <li>• Language Dept. (Independent Charge),</li> <li>• Social Justice &amp; Empowerment Dept.,</li> <li>• Disaster Management &amp; Relief Dept.</li> </ul>
10	Dr. Subhash Garg	<ul style="list-style-type: none"> <li>• Technical Education Dept. (Independent Charge),</li> <li>• Sanskrit Education Dept. (Independent Charge),</li> <li>• Medical &amp; Health Dept., Ayurved and Indian Medical Dept.,</li> <li>• Medical &amp; Health Services (ESI) Dept.,</li> <li>• Information &amp; Public Relation Dept.</li> </ul>

## Science & Technology

### **Mission Shakti**

India successfully shot down a live satellite in lower-earth orbit (LEO) by test-firing an anti-satellite (A-SAT) missile. The project was code named as Mission Shakti was led by the Defence Research and Development Organisation (DRDO). With this, India became the fourth country after the U.S., Russia and China to have the A-SAT technology.

India is Signatory to 1967 Outer Space Treaty which prohibits weapons of mass destruction in outer space. However, mission Shakti did not violate its terms as it was only ordinary weapon and the test was done in the lower atmosphere, hence, whatever debris that were generated will decay and fall back onto the earth within weeks.

### **NCFL and CyPAD launched**

Union Home Minister Rajnath Singh inaugurated a national cyber forensic lab and Cyber Prevention, Awareness & Detection Centre (CyPAD). The National Cyber Forensic Lab (NCFL) is part of the Indian Cyber Crime Coordination Centre (I4C) initiative and CyPAD is the Delhi Police's cybercrime unit.

### **Facebook launches tool to promote Lok Sabha elections**

Facebook recently launched two new India-specific tools to boost civic engagement on its platform in coming Lok Sabha Elections. The tools are Candidate Connect and Share You Voted.

### **Facebook to set up an Institute for Ethics in Artificial Intelligence**

Facebook grants \$7.5 million to set up an Institute for Ethics in Artificial Intelligence (AI) in collaboration with the Technical University of Munich (TUM) in Germany.

### **InfyTQ App**

Infosys has launched the app InfyTQ app to offer learning and engagement experiences for engineering students. The online free platform InfyTQ is open to all engineering students in their third and fourth year. InfyTQ encourages holistic development by imparting technical as well as professional skills and helps them become industry ready.

### **Bolo App**

Google has unveiled a new app Bolo; that aims to help children in primary school learn to read in Hindi and English. The app uses Google's speech recognition and text-to-speech technology and encourages children to read stories aloud through an animated character Diya.

### **Atmospheric Water Generator (AWG)**

Bharat Electronics Ltd (BEL) has unveiled the Atmospheric Water Generator (AWG) at the Aero India 2019. The new product aims to provide an innovative solution to meet the ever-increasing need for drinking water worldwide. AWG is being manufactured by BEL in collaboration with CSIR-IICT and MAITHRI, a start-up company based in Hyderabad.

### **Baroda Kisan**

Bank of Baroda is developing an agri-digital platform called Baroda Kisan to provide solutions for all major agricultural requirements including reliable and customised information, inputs for use, the convenience of renting farm equipment and market linkage for sale of agri-produces.

Baroda Kisan initiative is part of the Bank of Baroda's initiative to keep up with the use of technology in the field of agriculture. Baroda Kisan aims to provide a dedicated platform for farmers to ease their requirements.

IT Centre of Excellence (ITCoE) of Bank of Baroda in partnership with IBM India will execute the agri-digital platform. Bank of Baroda has signed a memorandum of understanding (MoU) with Six companies viz. Skymet Weather Services, Weather Risk Management Services, BigHaat, Agrostar India, EM3 Agri Services and Poorti Agri Services for the project.

### 106th Session of Indian Science Congress

The 106th Indian Science Congress was held at Lovely Professional University (LPU) campus in Phagwara, Jalandhar, Punjab. The theme of the 106th science congress was 'Future India: Science and Technology'. PM Modi the nation a new slogan Jai Jawan, Jai Kisan, Jai Vigyan and Jai Anusandhan.

### NIC Command and Control Centre Inaugurated

The Minister for Electronics and IT (MeitY) Ravi Shankar Prasad inaugurated the National Informatics Centre (NIC)'s Command and Control Centre (CCC) and its Centre for Excellence in Artificial Intelligence.

NIC hosts over 10,000 e-Governance applications and offers Data Centre and Cloud services to the Government. The Command and Control Centre is set up as a specialized facility with a nationwide view of ICT infrastructure for effective monitoring and management of the performance & availability of all these critical services. The Command and Control Centre will increase the agility of NIC's nationwide ICT infrastructure.

The Centre of Excellence in Artificial Intelligence aims to provide a platform to provide innovative new solutions and to test and develop solutions for projects undertaken by NIC at central and state level.

It has been established with a motto 'Inclusive AI' for responsive governance, to work towards improving Govt. service delivery to citizens. The centre of excellence will also provide Capacity Building & Institutionalizing AI in Ministries / Departments / Organizations.

### DD Science and India Science launched

The Minister of Science and Technology Harsh Vardhan launched the initiatives DD Science and India Science to popularise science in India. The initiatives aim to develop the scientific temper in Indian society. DD Science is a one-hour slot on Doordarshan National channel which will be telecast Monday to Saturday from 5 pm to 6 pm. DD Science may be scaled up to a full-fledged channel in the future.

India Science is an Internet-based channel which will be available on any internet-enabled device and will offer live, scheduled play and video-on-demand services. India Science will have a 24\*7 presence through [www.indiascience.in](http://www.indiascience.in)

### BSNL to provide data through SMS

BSNL has signed a partnership agreement with the French company Be-Bound to offer data connectivity through SMS in areas where there is no Internet connectivity or signal breaks. This technology was first introduced in France and it is also being tested in some of the African countries.

The SMS based data connectivity will work with the help of a technology embedded in a mobile App.

The app will detect if the user's area has poor network connectivity. Then the app will send commands to the Be-Bound server.

### Lithium-ion cell technology Transfer by ISRO

ISRO has selected 10 companies for the Lithium-ion cell technology Transfer after the examination of Request for Qualification (RFQ), which contained a brief description of the qualification aspects, technology transfer process, timelines and other relevant details.

Vikram Sarabhai Space Centre (VSSC) has developed the Lithium-ion cell technology. The technology will not be transferred to the industries to establish production facilities for producing lithium-ion cells to cover the entire spectrum of power storage requirements of the country

The progress in Li-ion battery technology research has made it the preferred power source for electric and hybrid electric vehicles owing to its high voltage, high energy density, long life cycle and high storage characteristics. Li-ion batteries find wide application in electronic gadgets, telecommunication and industrial applications as well as in aerospace.

### MoU between IIT KGP and C-DAC

IIT Kharagpur has signed an MoU with Centre for Development of Advanced Computing (C-DAC) to set up a 1.3 Petaflop high-performance computing facility and data centre funded under the National Supercomputing Mission. The new supercomputing system would be used for specific challenge domains like cryptography, chemistry, molecular dynamics, drug discovery, artificial intelligence and data sciences where the new system would be utilized.

**PetaFlop:** A unit of computing speed equal to one thousand million million ( $10^{15}$ ) floating-point operations per second (FLOPS).

### **PARAM Shivay**

PARAM Shivay, the first super computer designed & built under the National Supercomputing Mission by C-DAC (Center for Development of Advanced Computing) at IIT-BHU was launched.

### **BullSequana – Supercomputer**

France-based company Atos signed agreement with Centre for Development of Advanced Computing (C-DAC) for designing, building and installing BullSequana – the supercomputer in India under the National Supercomputing Mission (NSM).

Atos will supply BullSequana XH200 super computer to India to create a network of over 70 high-performance supercomputing facilities with a cumulative computing power of more than 10 petaflops, for various academic and research institutions across India.

### **Smart Garbage Bins**

Steel Authority of India Ltd (SAIL) has launched smart garbage bins made of stainless steel which integrates technology for smart waste management. The Smart Garbage Bins will send signals to the garbage collection vehicle about the 'fill-up' position of the bin. This provides for better cleaning and lower human intervention.

### **West Nile Virus**

A seven-year-old in Kerala has been detected with the West Nile Virus. The central government has sent the team to the state and is monitoring the case closely. West Nile Virus is a viral infection which typically spread by mosquitoes and results in neurological disease as well as death in people. The Virus is the member of the flavivirus genus and belongs to the Japanese encephalitis antigenic complex of the family Flaviviridae. It was first detected in a woman in the West Nile district of Uganda in 1937 and was later identified in birds (crows and Columbiformes) in the Nile delta region in 1953.

### **PSLV-C43 / HysIS Mission**

PSLV-C43 lifted off at 0957 hrs (IST) on November 29, 2018 from the First Launch Pad (FLP) of Satish Dhawan Space Centre SHAR, Sriharikota and successfully launched India's Hyper spectral Imaging Satellite (HysIS) and 30 international co-passenger satellites.

Weighing about 380 kg HysIS, is an earth observation satellite configured around ISRO's Mini Satellite-2 (IMS-2) bus. The primary goal of HysIS is to study the earth's surface in the visible, near infrared and shortwave infrared regions of the electromagnetic spectrum.

### **Hyperspectral Imaging**

Hyperspectral imaging or hypspec imaging (imaging spectroscopy) combines power of digital imaging and spectroscopy. It collects and processes information from across electromagnetic spectrum. Hypspec' imaging enables distinct identification of objects, materials or processes on Earth by reading spectrum for each pixel of scene from space.

### **GSAT-11 Mission**

GSAT-11 was successfully launched on December 05, 2018 from Kourou launch base, French Guiana by Ariane-5 VA-246. Weighing about 5854 kg, GSAT-11 is the heaviest satellite built by ISRO.

GSAT-11 is the fore-runner in the series of advanced communication satellites with multi-spot beam antenna coverage over Indian mainland and Islands. GSAT-11 will play a vital role in providing broadband services across the country. It will also provide a platform to demonstrate new generation applications.

### **GSLV-F11 / GSAT-7A Mission**

GSLV-F11 successfully launched GSAT-7A, ISRO's 39th communication satellite, on December 19, 2018 at 1610 hrs (IST) from the Second Launch Pad (SLP) of Satish Dhawan Space Centre SHAR, Sriharikota.

GSLV-F11 is the 13th flight of India's Geosynchronous Satellite Launch Vehicle (GSLV) and its 7th flight with indigenous Cryogenic Upper Stage (CUS).



GSLV – F11 is ISRO’s fourth generation launch vehicle with three stages. The four liquid strap-ons and a solid rocket motor at the core form the first stage. The second stage of the vehicle is equipped with high thrust engine using liquid fuel. The Cryogenic Upper Stage forms the third and final stage of the vehicle.

GSAT-7A with a lift-off mass of 2250 kg, is a geostationary satellite carrying communication transponders in Ku-band. The Satellite is built to provide communication capability to the users over the Indian region.

### **Gaganyaan Mission**

The Union Cabinet has approved a budget of Rs 10,000 crore for the Gaganyaan project. The Mission aims to carry three human beings for a maximum period of seven days in space. India will launch two unmanned missions before the final mission. The first unmanned test-flight will be launched in December 2020. The second unmanned test will be conducted in July 2021 and the human space flight will be launched in December 2021. The crew-members will be jointly selected by the IAF and ISRO. The crew members would be trained for two-three years.

### **Kalamsat V2**

Kalamsat V2 named after former president and Indian scientist Dr Abdul Kalam, was launched from Sriharikota space centre. It is the lightest satellite to be ever built and launched into orbit and also ISRO’s first launch of a satellite built by a private firm. Students belonging to Space Kidz India, a Chennai-based space education firm, built the satellite. It is a communications satellite for ham radio transmission, a form of wireless communication used by amateurs for non-commercial activities.

### **Microsat-R**

Microsat-R, an imaging satellite was successfully injected into intended orbit of 274 km by PSLV-C44 on January 24, 2019

## HSFC

The Human Space Flight Centre (HSFC), which would be the core of ISRO's future manned missions was inaugurated at the ISRO headquarters in Bengaluru. HSFC will implement the first development flight of Gaganyaan with the support of existing ISRO Centres.

## NGC 2808

Astronomers from Thiruvananthapuram and Mumbai have identified a new population of ultraviolet stars in the globular cluster NGC 2808 using the Indian multi-wavelength space observatory AstroSat, launched in September 2015.

## NEWS From NASA:

- NASA's Origins, Spectral Interpretation, Resource Identification, Security-Regolith Explorer (OSIRIS-REx) spacecraft has found water locked inside asteroid Bennu.
- InSight, NASA's new Mars lander, has set up its first instrument on planet Mars. The instrument placed by InSight, which landed on Mars on 26th November, is a quake monitor (seismometer) that will listen for quakes and wobbles. Transiting Exoplanet Survey Satellite (TESS) of NASA has discovered a third new planet – HD21749b. The other two discoveries made by the TESS probe are Pi Mensae b and LHS 3844b.
- NASA has launched Visualizing Ion Outflow via Neutral Atom Sensing-2 (**VISIONS-2**). It is a sounding rocket mission to get a closer look at the how the Earth's atmosphere is slowly leaking into space.

## Soyuz Spacecraft reaches ISS

Russian Soyuz spacecraft carrying NASA Astronaut Nick Hague and Christina Koch, and Cosmonaut (Russian Crew members are called as a cosmonaut) Alexey Ovchinin successfully docked International Space Station.

ISS programme is a joint project of five participating space agencies: NASA (United States), Roscosmos (Russia), JAXA (Japan), ESA (Europe), and CSA (Canada). It is an artificial satellite in low Earth orbit and circles the Earth in about 92 minutes.

### Chang'e 4

China's Chang'e 4 probe spacecraft has become the first spacecraft to land on the far side of the moon. Jaipur's Manish Sharma contributed in this project.

### AGNI-IV test fired successfully

India has successfully test-fired *nuclear-capable* long-range ballistic missile Agni-IV from the Dr Abdul Kalam Island in Odisha. The strategic *surface-to-surface missile* has a strike range of 4,000 km. The indigenously developed Agni IV is a two-stage missile and is 20 meters long with a weight of 17 tonnes.

### Helina Flight Tested

The Helicopter-launched anti-tank missile Helina was successfully test fired from the Integrated Test Range in Chandipur in Balasore district of Odisha. Helina is the air-launched variant of the Nag and range is estimated at between 7 to 8 kilometres.

Helina is guided by an infrared imaging seeker (IIR) operating in the lock-on before-launch mode and can be launched from twin-tube stub wing-mounted launchers on board HAL's Light Combat Helicopter (LCH) and Dhruv Advanced Light Helicopters (ALH).

### World thinnest material

Scientists from the Indian Institute of Technology Gandhinagar have developed a material that is 100,000 times thinner than a sheet of paper. Scientists have developed a two-dimensional material of just one-nanometer thickness using Magnesium diboride. It is said to be the world's thinnest material and it can find applications in a number of applications from next-generation batteries to ultraviolet absorbing films.

### **Poly-Oxime Gel**

Scientists from the Institute for Stem Cell Biology and Regenerative Medicine, Bangalore have developed a protective gel called Poly-Oxime, which can be applied on the skin and can break down toxic chemicals into safe substances, preventing them from going deep into the skin and organs like the brain and the lungs. This would be a boon for Indian farmers since most Indian farmers do not wear any protective gear while spraying chemicals in fields, which often leads to pesticide exposure and toxicity.

### **Tackling Zika, dengue, JE and chikungunya**

Scientists from the National Brain Research Centre (NBRC) at Manesar have figured out cellular and molecular mechanisms which show how the Zika virus causes microcephaly or small head size in babies.

Another study from the scientists of the Regional Centre for Biotechnology, Faridabad have identified a key protein which helps dengue as well as Japanese Encephalitis viruses replication inside the human body by inhibiting anti-viral cytokines. This research could pave way for the development of targeted drugs for dengue and JE.

A group of researchers from Amity University, Noida, Jamia Millia Islamia University, Delhi and Maharishi Dayanand University, Rohtak, have developed a biosensor using molybdenum disulphide nanosheets for detecting Chikungunya.

### **Early flowering mustard**

TERI School of Advanced Studies has developed an early flowering transgenic variety of mustard.

### **Gene Editing of Banana Genome**

Researchers from the National Agri-Food Biotechnology Institute, Mohali have edited the banana genome using the gene editing technique of CRISPR/Cas9. This was first such attempt on any fruit in India. Gene editing can now be deployed for improving nutritional quality, agronomically important traits as well as pathogen resistance in banana.

### **Faster diagnostic tests for tuberculosis**

Scientists from the Translational Health Science and Technology Institute, Faridabad and All India Institute of Medical Sciences, New Delhi have jointly developed a highly sensitive and rapid test for detection of tuberculosis infection in lungs and surrounding membranes. These new tests use Aptamer Linked Immobilized Sorbent Assay (ALISA) and Electrochemical Sensor (ECS) for detection of a bacterial protein in the sputum, unlike current tests that use antibodies for detection of bacterial proteins in sputum samples.

### **Detection of Arsenic in floodplains of Punjab**

A study by the New Delhi-based TERI School of Advanced Studies has found that Punjab's floodplains are severely affected by arsenic contamination. This discovery was significant because till now arsenic was a major problem in West Bengal, Bihar, Jharkhand, Uttar Pradesh, Assam, Manipur and Chhattisgarh. Even though Arsenic was detected in ground waters, the detection of Arsenic in floodplains of Punjab is something new.

### **Hope for Alzheimer's, Huntington's**

Scientists from the Indian Institute of Science (IISc), Bengaluru, have figured out how the way memory deficit develops in early stages and results in Alzheimer's disease. Scientists have found that early breaking down of a protein, fibrillar actin or F-actin, in the brain leads to disruption in communication among nerve cells and consequently memory deficits. This discovery can be used to develop early diagnosis test in future.

Another study by the Researchers from the Department of Genetics at Delhi University South Campus has found that it is possible to restrict the progression of Huntington's disease by increasing insulin signalling in the brain neuronal cells.

### **Space weather warning model rules out 'mini ice age'**

Scientists from the Indian Institute of Science Education and Research (IISER) Kolkata have dismissed the speculation that the upcoming sunspot cycle is going to be stronger using a model. The model

developed by the scientists makes it possible to make predictions almost a decade before the next sunspot cycle activity peaks in strength.

### **Green technique to address Plaster of Paris pollution**

Scientists from the Pune-based National Chemical Laboratory (CSIR-NCL) have developed a technique which helps recycle Plaster of Paris waste from hospitals in an eco-friendly and economical way. This new technique disinfects waste and converts it into useful products like ammonium sulphate and calcium bicarbonate. This technique can also be used to disintegrate PoP waste from idols immersed in water bodies.

### **New tool for autism screening**

Scientists from the Government Medical College and Hospital, Chandigarh, have developed an Indian tool for screening children for autism. The tool is designed to help community health workers to carry out initial screening for autism.

### **Discovery of Stone Age tools**

The discovery of the Stone Age tools from a village near Chennai suggest that a Middle Palaeolithic culture was present in India around 385,000 years ago which is roughly the same time the Middle Palaeolithic culture is known to have developed in Africa and in Europe. This discovery pushes back the period when populations with a Middle Palaeolithic culture may have inhabited India. It challenges the popular theory that the Middle Palaeolithic was brought to India by modern humans dispersing from Africa only around 125,000 years ago or later.

Similarly a population genetic study from the North has revealed that the Rors who inhabit modern Haryana came to the Indus Valley when it was flourishing during the Bronze Age and inducted West Eurasian genetic ancestry.

### **Artificial vertebral disc using silk polymer**

Scientists at Indian Institute of Technology, Guwahati have developed a silk-based bioartificial disc that may find use in disc replacement therapy in future.

### **Computing capacity for weather forecasting upgraded**

The Indian Institute of Tropical Meteorology (IITM) has upgraded its computing capacity for weather forecasting and climate monitoring. This takes its total high-performance computing (HPC) power to as high as 6.8 Petaflop. India is now at the fourth position, next only to the United Kingdom, Japan and USA in terms of dedicated capacity for HPC resources for weather and climate proposes.

### **Transgenic rice with reduced arsenic accumulation**

Researchers at Lucknow- based CSIR-National Botanical Research Institute have developed transgenic rice by inserting a novel fungal gene which results in reduced arsenic accumulation in rice grain.

### **Sikkim gets a real-time landslide warning system**

Researchers of Kerala-based Amrita University and Sikkim State Disaster Management Authority have deployed a real-time landslide warning system consisting of over 200 sensors that can measure geophysical and hydrological parameters like rainfall, pore pressure and seismic activities has been set up in the Sikkim-Darjeeling belt of the north-eastern Himalayas.

### **Paper Sensor to detect freshness of Milk**

Scientists from the Indian Institute of Technology, Guwahati, have developed a paper kit to test the freshness of milk and determine how well the milk has been pasteurized. The kit can also aid in ensuring that milk is consumed before it turns too sour with the help of a smartphone app.

### **New Indicator for Diabetes**

A study by the scientists from National Chemical Laboratory, Pune indicates levels of free albumin and albumin attached to glucose molecules in the blood can be a better diagnostic test for diabetes.

### **International Year of the Period Table of Chemical Elements**

UNESCO has declared 2019 as the International Year of the Period Table of Chemical Elements to commemorate the 150th birthday of the periodic table of chemical elements. Russian scientist Dmitry Mendeleev first published the Periodic table of the Chemical elements in the year 1869.

The periodic Table contains 118 Elements. The first 98 elements listed in the periodic table occur naturally, while, elements from 99 to 118 (oganesson) have only been synthesized in laboratories or nuclear reactors.

On 28 November 2016, the International Union of Pure and Applied Chemistry (IUPAC) approved the name and symbols for four elements: nihonium (Nh), moscovium (Mc), tennessine (Ts), and oganesson (Og), respectively for element 113, 115, 117, and 118.

### **GSI launches 22 permanent GPS Stations**

The Geological Survey of India (GSI) has launched 22 permanent global positioning system (GPS) stations across India to identify seismically hazardous zones and encourage mapping activities. These 22 stations are part of the 35 stations planned by GSI to establish and maintain a network of continuously operating 35 permanent GPS stations.

### **National Action Plan for Viral Hepatitis**

Recently, Ministry of Health and Family Welfare launched National Action Plan for Viral Hepatitis.

- The Plan provides a strategic framework, based on which National Viral Hepatitis Control Program was launched in 2018 under National Health Mission.
- National Viral Hepatitis Control Program goal is ending viral hepatitis as a public health threat in the country by 2030. It aims to reduce morbidity and mortality due to viral hepatitis.



### **Eat Right India movement**

- It is multi-sectoral effort with primary focus on daily intake of salt, sugar, fat, phasing-out trans-fats from diets and promoting healthier food options.
- It is built on two broad pillars of Eat Healthy and Eat Safe.
- It brings together three ongoing initiatives of FSSAI that target citizens:
  - The Safe and Nutritious Food (SNF) Initiative, focused on social and behavioral change around food safety and nutrition at home, school, workplace and on-the-go.
  - The Eat Healthy Campaign focused on daily intake of salt, sugar, fat, phasing-out trans-fats.
  - Food fortification, focused on promoting five staple foods- wheat flour, rice, oil, milk and salt, with key vitamins and minerals added to improve their nutritional content.
- It has seven broad areas of action—
  - to increase demand for healthier food by influencing each other as role models, caregivers and peers,
  - set standards in schools, promote healthy eating habits and use food as a pedagogical tool,
  - have appropriate consumer friendly nutrition labelling and restriction on marketing to children through a suitable regulation,
  - have higher taxation for unhealthy food through differential GST rates,
  - ensure availability of healthier food options and guide consumers through appropriate menu labelling,
  - redesign choices available at points of sale with increased availability and prominent display of healthier options,
  - encourage food processing industry to formulate their food products by reducing unhealthy ingredients.
- Under the movement, “Aaj se thoda kam campaign” was launched to encourage citizens to adopt healthy food habits through social media and mass media.

### **Tele-robotic Coronary Intervention**

India became the world's first to successfully perform a tele-robotic coronary intervention. It is a robotic method of performing heart surgery. With the help of the Internet and a robotic tower, a surgeon is able to treat patients from a distance.

---

### Young Scientist Program

Indian Space Research Organization (ISRO) has recently launched Young Scientist Program for school students.

#### **About the Young Scientist Program:**

- It aims to inculcate and nurture space research fervor in young minds
- Under this 1-month program, students from each of the 29 States and 7 UTs will be selected.
- Students mostly from class VIII will be given lectures and access to R&D labs and practical experience of building a small satellite.
- It is conceptualized after the similar Program run by the American Space Agency NASA.
- All the expenses of travelling and boarding will be funded entirely by ISRO.
- Under this, six incubation centres will be established in various parts of the country - North, South, East, West, Centre and North-East, and the first such centre has been established in Agartala in Tripura.

### Prime Minister's Science, Technology and Innovation Advisory Council (PM-STIAC)

In August 2018, Union Government constituted a new 21-member advisory panel on science, technology and innovation called Prime Minister's Science, Technology and Innovation Advisory Council (PM-STIAC). It replaced earlier Scientific Advisory Committee to Prime Minister and to Cabinet.

#### **Composition and Functions:**

- Principal Scientific Advisor, government of India – (currently Prof. K. Vijay Raghvan) heads the panel.
- It has nine members, including Chairperson.
- Apart from nine members, it also has twelve special invitees — eleven ex officio secretaries 10 central ministries, related to science, technology, energy and education, are special invitees to the panel.
- Advise PM on science, technology, as well as innovation.
- Coordinate implementation of PMs scientific vision.

- Aid in formulation and timely implementation of major science and technology missions and evolve interdisciplinary technology development programmes.
- Advise government on developing 'Clusters of Excellence' in science including city-based R&D clusters.
- Bring together all science and technology partners from academia and institutes to industries near such centers or cities.

### PM-STIAC Missions

The PSA's office held 4 meetings of the PM-STIAC beginning October 2018 and key national missions emerged from the discussions and are being driven by the Office of the PSA. In March 2019, Prof. K. Vijay Raghvan shared details of the nine national missions guided by PM-STIAC. These are:

#### **MISSION 1: Natural Language Translation**

- To make opportunities and progress science and technology accessible to all, this mission aims to remove the barrier that the requirement of high-level of facility in English poses today.

#### **MISSION 2: Quantum Frontier**

- This mission aims to initiate work in control of the quantum mechanical systems, with a large number of degrees of freedom, as one of the great contemporary challenges in fundamental science and technology.

#### **MISSION 3: Artificial Intelligence**

- The Artificial Intelligence (AI) mission will focus on efforts that will benefit India in addressing societal needs in areas such as healthcare, education, agriculture, smart cities and infrastructure, including smart mobility and transportation.

#### **MISSION 4: National Biodiversity Mission**

- This mission will include a comprehensive documentation of India's biodiversity with the potential for cataloguing and mapping all lifeforms in India including associated cultural and traditional practices

#### **MISSION 5: Electric Vehicles**

- Mission aims Electric Vehicles (EVs) to become economically viable and scalable, focused research, development and innovation are needed to build indigenous capability. Developing

vehicle sub-systems and components for Indian requirements including rare earth based electric motors, Li-ion batteries, power electronics etc. using academia- industry collaboration.

**MISSION 6: Biosciences for Human Health**

- The primary goal of the mission is to construct comprehensive reference maps of genomes and to understand the dynamics of how exposures to different environments have impact on our bodies.

**MISSION 7: Waste to Wealth**

- The goal of the Waste to Wealth mission is to identify, develop and deploy technologies to treat waste to generate energy, recycle materials and extract worth.

**MISSION 8: Deep Ocean Exploration**

- The purpose of this mission is to scientifically explore the deep oceans towards improving our understanding of the blue frontier.

**MISSION 9: AGNIi**

- This mission aims to support the national efforts to boost the innovation ecosystem in the country by connecting innovators across industry, individuals and the grassroots to the market and helping commercialise innovative solutions.

Apart from the 9 missions, the Office of Principal Scientific Adviser has also initiated other major Science, Technology and Innovation projects, including:

- Research Clusters
- Earth Museum
- Brahmaputra River System
- Indian Science, Technology and Engineering Facilities Map (I-STEM)
- Energy Security

**Nobel Prizes 2018:**

Field	Nobel Laureates	Contribution
Physiology or Medicine	James P. Allison(USA), Tasuku Honjo(Japan)	For their discovery of cancer therapy by inhibition of negative immune regulation
Physics	G�rard Mourou(France), Arthur Ashkin(USA), Donna Strickland(Canada)	For their method of generating high-intensity, ultra-short optical pulses in the field of laser physics
Chemistry	George Smith (USA), Frances Arnold (USA), Greg Winter (UK)	For control of evolution and used it for purposes that bring the greatest benefit to humankind.
Peace	Denis Mukwege (Democratic Republic of the Congo), Nadia Murad (Germany)	For their efforts to end the use of sexual violence as a weapon of war and armed conflict.
Economic Sciences	William Nordhaus (US) Paul Romer(US)	For work on climate change, and the endogenous growth theory

- The Nobel Prize in Literature **has been postponed** for the year 2018.