

### **Falcon Heavy**

- Falcon Heavy is a reusable super heavy-lift launch vehicle designed and manufactured by Space X, a private American aerospace manufacturer.
- Its first test flight carrying a red sports car was successfully launched from florida pad used by NASA.
- It is the most powerful operational rocket in the world.
- It can lift about twice the payload at one third of the cost by Delta 4 rocket which was the most powerful rocket till now.
- This lift capacity allows to launch heavier satellites into low Earth orbit, or reach higher geostationary orbits to keep station over the same part of Earth.
- Its three first-stage boosters are designed to be reusable.

### **Galapagos**

- The rising tourist arrival to Galapagos Island puts pressure on the this fragile volcanic archipelago.
- The Galapagos Islands, part of the Republic of Ecuador, distributed on either side of the Equator in the Pacific Ocean surrounding the centre of the Western Hemisphere.
- The island inspired Charles Darwin's Theory of evolution and was his field of study.
- The Islands and their surrounding waters form the Galapagos Province of Ecuador, the Galapagos National Park, and the Galapagos Marine Reserve.
- UNESCO recognised the islands as a World Heritage Site and as a biosphere reserve

### **Prime Minister's Research fellow scheme**

- 'Prime Minister's Research Fellows (PMRF)' scheme aims to improve the quality of research by attracting the best talents across the country.
- Under this scheme, the best students who have completed or are in the final year of B.Tech or integrated M.Tech or M.Sc in science and technology streams in the IISc/IITs/NITs/IISERs/IIITs will be offered direct admission in the PhD programme in the IITs/IISc.
- The fellowship scheme will be implemented for a period of seven years from 2018-19.
- A maximum of 3,000 fellows will be selected over first three-year period, beginning 2018-19.
- The students who get shortlisted through the selection process would be offered a fellowship of Rs. 70,000 per month for the first two years, Rs. 75,000 per month for the third year and Rs. 80,000 per month in the fourth and fifth years.

- Apart from this, a research grant of Rs.2.00 lakh will be provided to each of the fellows for a period of 5 years to cover their foreign travel expenses for presenting research papers in international conferences and seminars.
- It will help in tapping the talent pool of the country for carrying out research indigenously in cutting edge science and technology domains.

### **Vizag - Next Scuba Diving Destination**

- A second shipwreck was found off the coast of Vishakhapatnam, Andhra Pradesh.
- The ship wreck is spotted with critically endangered fish species called Goliath.
- A century-old shipwreck was unearthed in the same region a month before.
- Some of the other interesting aqua life species spotted were barracuda, the trevally and jack fish and a rich bed of corals like the star feather corals, sand corals and whip corals.
- Scuba diving is a mode of underwater diving where the diver uses a self-contained underwater breathing apparatus (scuba) which is completely independent of surface supply, to breathe underwater.

### **Goliath grouper**

- It is extremely rare fish species, recently discovered by a team of experienced divers and diving instructors near vizag.
- It is recognised as a critically endangered species by the IUCN (International Union for Conservation of Nature).
- It is considered to be the keystone species of an ecosystem and is entirely protected from harvest in the U.S.
- It is usually found in tropical and subtropical waters of the Atlantic Ocean.
- It is regionally abundant near Vishakhapatnam in the Bay of Bengal region.
- It is found from inshore to about 100 m in reef, mangrove, seagrass, and estuarine habitats.

### **Prithvi-II**

- India successfully test-fired its indigenously developed nuclear capable Prithvi-II missile from a test range in Odisha.
- It is surface to surface missile with a strike range of 350 km.
- It is capable of carrying 500-1,000 kilogram of warheads and is thrust by liquid propulsion twin engines.
- The state-of-the-art missile uses advanced inertial guidance system with manoeuvring trajectory to hit its target.

### **National Bank for Agriculture and Rural Development (NABARD)**

- Amendments were passed by Parliament to the NABARD Act, 1981.
- These amendments support the government's push to boost the rural and agricultural sector.
- National Bank for Agriculture and Rural Development (NABARD) is an apex development financial institution in India, headquartered at Mumbai.
- It was established on the recommendations of B.Sivaraman Committee, to implement the National Bank for Agriculture and Rural Development Act 1981.
- The 1981 Act was enacted to establish a development bank

1. to provide and regulate credit
2. to promote and develop agriculture, small-scale industries, cottage and village industries
3. to support handicrafts and allied economic activities in rural areas.

### **Supreme Court's Decision on Iron Ore Mining in Goa**

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

The Supreme Court quashed all iron ore mining leases in Goa.

#### **What is the reason behind SC decision?**

- In April 2012, SC ordered a 10% levy on the sale value of ore to set up a Goa Permanent Fund (GPF) for protection of intergenerational equity.
- The idea of the SC was to hold the natural and cultural environment of the Earth in common both with other members of the present generation and with other generations, past and future.
- SC directions were in line with framing a policy to fight corruption, protect the environment, and safeguard common people's interest.
- But such fund has been never set due to the powerful vested interest.

#### **Why mining sector is hesitant to create GPF?**

- In 2015 union government had ordered the setting up of the **District Mineral Foundations (DMFs)** in mining-affected districts to fund the Pradhan Mantri KhanijKshetraKalyan Yojana.
- Contributions were fixed at 10% of royalty for leases granted on or after January 12, 2015, and 30% for older leases.

- And these funds were being used to supply drinking water, control pollution, healthcare, education, sanitation, welfare of vulnerable sections, and skill development, etc.
- Mining companies have challenged the creation of the GPF, due to their contributions to DMFs and claimed GPF amounted to a double levy.

### What are the global experience on setting up a wealth fund?

- The global experience underlines the “benefit of inheritance” which the Economic Survey 2016-17 also noted.
- About 50 countries/sub-nations have created permanent funds based on extracting economic rent from oil and other natural resources
- **Norway** - Set up in 1990, Norway’s Oil Fund is now the world’s largest sovereign wealth fund, worth more than \$ 1 trillion — over 1.5 times the country’s GDP.
- In September 2017, it guaranteed \$ 192,307 (over Rs 1.2 crore) to every Norwegian citizen.
- **North America** -Alberta and Alaska set up Oil Funds in the mid-1970s.
- Alberta and Alaska used the bulk of revenues to cut or abolish taxes, and allocated only a fraction to their Funds.
- **South America** -Chile set up its Copper Stabilisation Fund in 1985.
- During the 1997-98 financial crisis, it channelled \$ 200 million from the Fund to the national economy.
- **Africa** -Botswana established the Pula Fund in 1994 to save part of the income from diamond exports for future generations.
- **Mongolia**- It created a Human Development Fund, making every citizen eligible to own an equal share of the national mineral wealth.

## India’s Stand on Indo-Israel-Palestine Relationship

### What is the issue?

- Israel-Palestine conflict is a long standing one in which India has taken different stands for years.
- Present Indian Administration is taking a pragmatic approach through a diplomatic relationship between both nations.

What is the conflict between Israel-Palestine?

- Brutal European anti-Semitism in 19<sup>th</sup> century convinced the Jewish people could never survive outside of a country of their own which made an emphasis on Zionism.

- Zionism is Israel's national ideology and it believe Judaism is a nationality as well as a religion, and that Jews deserve their own state in their ancestral homeland, Israel.
- Palestinians are the Arab population who hails from the land which is under Israel, are against the Zionism ideology.
- Arabs often see Zionism as a species of colonialism and racism aimed at appropriating Palestinian land and systematically excluding the Palestinians that remain.
- Due to this Palestinians wants the territory as Palestine to be established as a state by that name on all or part of the same land.

#### **What are recent incidents in Israel-Palestine conflict?**

- The west bank and Gaza strip of the Israel is claimed by the Palestinians, and Tel Aviv is being the capital of Israel as of now.
- But in December 2017, US administration introduced a proposal for making Jerusalem (a holy place of Jews, Muslims and Christians) as the capital of Israel.
- This proposal was opposed by many nations by introducing a resolution in UN.
- India also signed against US moves amidst of maintaining a good ties with Israel.

#### **What was India's stand on Palestine so far?**

- In 1950s India ultimately accepted Israel as a country following the lead given by two Muslim-majority countries, Turkey and Iran.
- In 1953, Israel opened a consulate in Mumbai, but didn't had a diplomatic presence in New Delhi.
- On the other hand, India in 1975 became the first non-Arab country to recognise Yasser Arafat's Palestine Liberation Organisation (PLO) as the sole legitimate representative of the Palestinian people, and permitted it have an independent office in New Delhi.
- In 1978, India raised its voice to protest against the injustice being meted out to Palestinians by the Zionist attempts.
- India's position on Palestine has been guided by the general consensus in the Arab world, the Non-Aligned Movement and the United Nations.

### What is the present stand of India in the issue?

- India established full diplomatic relations with Israel in January 1992, over 40 years after it recognised that country.
- Since then, successive governments have followed a policy of strengthening the relationship with Israel, while maintaining diplomatic support for the Palestinian cause.
- But present Indian administration is expected to be tilted towards the Israel, as India elevates its strategic partnership with Israel in areas such as defence, security, agriculture, water management and innovation.
- At the same time with its vote in the UN Jerusalem, India has demonstrated the willingness and capability to follow its own geopolitical and pragmatic interests.

### Funding Basic Research in Science

#### What is the issue?

India's funds for Science in general and for small scale science projects in particular are very low.

#### How is India's expenditure in Science?

- Currently, **research and development expenditure** stands at around Rs. 1 lakh crore.
- This amounts to **0.8% of the GDP**.
- The recent Economic Survey highlights the role of scientific and technological innovations in economic prosperity.
- It thus calls for doubling the above share.
- Even the doubled amount would be behind that of China, Israel, Japan and the U.S.
- Notably, each of these countries spends more than 2% of their GDP on research.

#### What are the concerns?

- **Research Grants** - This year's Budget has allotted around Rs. 28,000 crore to science ministries.



- Out of this, a mere **3.22%** is for **basic science projects**.
- This will be disbursed as competitive research grants by the statutory body, Science and Engineering Research Board (SERB).
- This is very low in comparison to many other countries where the share is around 30 to 40%.
- **Small Projects** - Share of expenditure for R&D in GDP is a significant indicator.
- However, more importantly, appropriate share between small and large scale projects also needs attention.
- Notably, funds for exploratory small-scale science researches are diminishing.

### How have small science projects transformed?

- Creative and indigenous innovations often result from the efforts of scientists working alone or in small groups.
- The small science projects often emerge as harbingers of technological changes.
- **Higgs boson** - Discovery of Higgs boson/God particle in 2012 at CERN, European Organisation for Nuclear Research was popular.
- It came with \$1 billion annual expenditure of CERN.
- Yet, this began in seminal theoretical works of several independent scientists including Peter Higgs.
- **Spectrometer** - In 1928, C.V. Raman spent about Rs. 200 on his laboratory-built spectrometer.
- Today, the global market for Raman spectrometers is about \$1.2 billion.
- It also brought to India its first science Nobel prize.
- **ISRO** - Through the 1960s, Vikram Sarabhai was experimenting with simple sounding rockets.
- These ultimately grew into the Indian Space Research Organisation of today.

### What is desired?

- India's provision for **competitive research grants** needs upward revision.

- **Science budget** has to be balanced between mission-oriented projects and the small research grants.
- Mission-oriented projects include those in the areas of defence, space, nuclear and environmental sciences.
- Besides these, the **research ecosystem** that provides human resources and feeds for innovations needs enough policy focus.
- The Economic Survey recommends having a greater share of an **investigator-driven model** for funding science research.
- These are voluntary, independent researches.
- Here, the investigator or the institution (academic, private, or governmental) serves as the Sponsor.
- It provides more scope to generate individual, innovative ideas.
- The Survey also calls for **expanding resources** in this regard.
- It stresses on creating **governance structures** for facilitating supportive research environment in the country.

**Source: The Hindu**

### **Quick Fact**

### **SERB**

- The Science and Engineering Research Board is an autonomous body.
- It works under the **Department of Science and Technology**.
- It was set up by the **Science and Engineering Research Board Act, 2008**.
- It is aimed at **promoting basic research** in Science and Engineering.
- It provides financial assistance for those involved.
- These include individual scientists, academic institutions, R&D laboratories, industrial concerns and other agencies.



### **Supreme Court gives U.P. govt. 4 weeks for Taj protection plan**

The Supreme Court directed the Uttar Pradesh government to place before it a vision document on protection and preservation of the TajMahal and asked why there was a “sudden flurry of activity” in the Taj Trapezium Zone (TTZ).

- The TTZ is an area of about 10,400 sq. km spread over the districts of Agra, Firozabad, Mathura, Hathras and Etah in U.P. and Rajasthan.
- The Court asked why leather industries and hotels were coming up in the TTZ when such activities were stopped earlier.
- The court also asked the State government to file within four week a vision document on protection and preservation of the 17th century mausoleum.

The court had in December last year said that a detailed and comprehensive vision document and plan with a futuristic perspective that could protect and preserve the iconic monument, its environs and the TTZ for at least a few hundred years, should be prepared.

### **KailashYatra via Nathu La to resume**

China has confirmed restarting of the KailashMansarovarYatra through the Nathu La pass, the Ministry of External Affairs informed the LokSabha.

- The matter was raised by the Government with the Chinese government, including during the meeting of the External Affairs Minister with the Chinese Foreign Minister in December 2017.
- Subsequently, the Chinese government has confirmed resumption of Yatra on this route.

### **Protect investors from unfair trading, says SC**

The Supreme Court asked the Centre to frame a more comprehensive legal framework to govern the securities market where ingenious means of manipulation affect gullible investors.

- Fairness, integrity and transparency are the hallmarks of the stock market in India. As the market grows, ingenious means of manipulation are also employed. In such a scenario, it is essential that SEBI keeps up with changing times and develops principles for good governance in the stock market which ensure free and fair trading the court observed

- The court said there is an imminent need to prevent instances of “synchronised trading” as they are fundamentally violative of transparent norms of securities trading.

A synchronised trade is a transaction wherein the buy and sell order quantities are identical, and are put through at exactly the same time on the trading platform.

### **Taxmen send one lakh notices to cryptocurrency investors**

The tax department had conducted a nationwide survey which showed \$3.5 billion worth of transactions on various cryptocurrency exchanges across India over a period of 17 months.

- Notices were served to People who have made investments [in cryptocurrency] and have not declared income while filing taxes and have not paid tax on the profit earned by investing

Finance Minister Arun Jaitley had, in his Budget speech last week, stressed that cryptocurrencies were not legal tender.

However, industry players said the action taken by the Income Tax Department still did not mean that holding cryptocurrencies was illegal.

- the Finance Minister and the RBI have both clarified that cryptocurrencies are not legal tender, this means that you cannot use it in place of the rupee. But they did not say anything about investing in it as an asset.

India is a very attractive market for cryptocurrency companies, both domestic and international. A worldwide study of the market by Malaysian firm Pundi X, which is looking to enter the Indian market, found that India accounted for 10% of the global trade in cryptocurrencies.

### **Remit unclaimed insurance funds: IRDAI**

The Insurance Regulatory and Development Authority of India (IRDAI) has directed all insurers having unclaimed amounts of policyholders for a period of more than 10 years, as on September 30, 2017, to transfer the money to the Senior Citizens' Welfare Fund (SCWF) by March 1 this year.

- Following an announcement in the Budget Speech 2016, the SCWF was established for promoting the welfare of senior citizens.
- Beyond a specified period, unclaimed amounts in small savings and other savings schemes of the Centre, in PPF, EPF, bank and Coal Mines PF accounts as well as life and non-life insurance schemes need to be transferred to the SCWF.

### **CCI slaps Rs. 136 cr. fine on Google**

The Competition Commission of India imposed a fine of Rs. 136 crore on search engine major Google for unfair business practices in the Indian market for online search.

Passing the order on complaints filed back in 2012, the regulator said the penalty was being imposed on Google for “infringing anti-trust conduct.” It was alleged that Google was indulging in abuse of dominant position in the market for online search through practices leading to search bias and search manipulation, among others.

## **INTERNATIONAL**

### **Khaleda Zia sentenced to five years in jail for graft**

Bangladesh Nationalist Party leader and three-time Prime Minister Khaleda Zia was jailed for five years after being found guilty in a corruption case by a Special Judge’s Court in Dhaka.

- The court also awarded 10-year-sentences to Tarique Rahman — Ms. Zia’s son and the party’s exiled vice-chairman — and four others.

She was charged with misappropriating Taka 21 million in foreign donations received by the ‘Zia Orphanage Trust’.

### **India rejects Maldives offer**

India rejected an offer by Maldivian President Abdulla Yameen to send a special envoy to discuss the ongoing emergency in the country, calling instead on the embattled President to first address its concerns over the suspension of constitutional rights in the Maldives.

- President Yameen has sent special envoys to what he called “friendly countries” — China, Saudi Arabia and Pakistan.
- New Delhi had rejected the offer of an envoy because of protocol and scheduling reasons, but also because the government was unhappy with Mr. Yameen’s declaration of emergency and the military crackdown that followed.

**STATE-TELANGANA**

**Mobile app planned to empower farmers**

As part of its tripartite agreement with Professor Jayashankar Telangana State Agricultural University (PJTSAU) and Western Sydney University (WSU) Australia, Riverbridge Ventures India has decided to develop “GyanKisan” mobile application with a view to empowering farmers in Telangana by providing agricultural knowledge and market conditions.

- A meeting was held under the chairmanship of Vice-Chancellor of PJTSAU V. Praveen Rao with representatives of Riverbridge Ventures India and Athulya Ginige and S.K. Hooda of WSU joining in via video conference.
- They discussed assisting the team of Riverbridge Ventures in obtaining scientific knowledge relevant to locally grown crop varieties and associated best practices to be converted into actionable information and deliver it to farmers via mobile phones with the help of the proposed app.

A decision was taken to organise a workshop with policy makers, Krishi Vignana Kendra (KVK), District Agricultural Advisory and Transfer of Technology Centre (DAATTC) coordinators, agricultural extension officers and NGOs working on farmers issues. The workshop would explore how agriculture extension services could be transformed.

- It was also decided that academics from WSU would also participate in the workshop, which has been tentatively planned in March at PJTSAU.
- Further, an agreement was inked to send academics from PJTSAU to WSU. They would work together on the details associated with new scenarios that are to be trialled in Telangana.