

1. Iran, China and Russia's Joint Naval Drill in Indian Ocean and Gulf of Oman

Why in News?

- Iran, China and Russia began a joint naval exercise in the Indian Ocean and Gulf of Oman, in what is being seen as a response to recent US maneuvers in the region. The drill is expected to further provoke Washington.

Highlights:

- The four-day exercise has been launched from the port city of Chabahar in southeastern Iran.
- The Chabahar port, which is near Iran's border with Pakistan, was built with Indian assistance and is operated by India.
- Since 2019, the region has been a focal point of global tensions.
- The Gulf of Oman, where the exercise is being held, is a critical waterway as it connects the Arabian Sea to the Strait of Hormuz, a 33-km wide passage which opens into the Persian Gulf.
- It is located between energy producers Iran, Iraq, Kuwait, Saudi Arabia, Bahrain, Qatar, Oman (the exclave of Musandam), and the United Arab Emirates (UAE).
- A fifth of the world's oil passes through this waterway – around 30% of all sea-borne crude Oil Globally.

Why Tensions Have Peaked?

- In July, Iran detained a British oil vessel, the Stena Impero, for two months, believed to be in retaliation for an Iranian oil carrier that British authorities detained at Gibraltar earlier in the same month.
- Tensions rapidly escalated in September, when the US accused Iran of carrying out drone attacks on oil fields in Saudi Arabia.
- The attacks had immediately reduced Saudi Arabia's oil production by half (5% of global oil production), until the affected facilities returned to full capacity by the end of the month.
- Iran denied the allegations, and the responsibility was claimed by Yemen's Houthi rebels.
- US last year withdrew from the 2015 Iran nuclear deal and reimposed sanctions on Tehran. The US has since pushed for Iranian energy sales to be cut off, crippling Iran's economy.

2. SnowEx

Why in News?

- For a better understanding of how much water is contained in each winter's snowfall and how much will be available when it melts in the spring, NASA has launched a seasonal campaign — part of a five-year programme called SnowEx.
- Around 1.2 billion people, or nearly one-sixth of the world, depend on seasonal snow and glaciers for their water supply.

SnowEx:

- SnowEx was initiated in 2016-17.
- The overall target is optimal strategies for mapping global snow water equivalent (SWE) with remote sensing and models leading to a Decadal Survey “Earth System Explorer” mission.
- Within its geographic range, SnowEx assesses where snow has fallen, how much there is and how its characteristics change as it melts.

How does it work?

- It uses airborne measurements, ground measurements and computer modelling.
- The airborne campaign will fly radar and lidar to measure snow depth, microwave radar and radiometers to measure SWE, optical cameras to photograph the surface, infrared radiometers to measure surface temperature, and hyperspectral imagers for snow cover and composition. Ground teams will measure snow depth, density, accumulation layers, temperature, wetness and snow grain size — the size of a typical particle.

3. Gaganyaan - Unmanned Test Mission

Why in News?

- The Indian Space Research Organisation (ISRO) planning its first unmanned test mission of the Gaganyaan mission.

Highlights:

- Gaganyaan will be the first manned space mission of ISRO which is proposed to be launched by 2022.
- India has already successfully developed and tested several building blocks, including re-entry space capsule, pad abort test, safe crew ejection mechanism in case of rocket failure, flight suit developed by DEBEL and the powerful GSLV-MkIII launch vehicle.

- The orbital and re-entry mission and recovery operations have been flight demonstrated in Space Capsule Re-entry Experiment (SRE) mission.
- Having met all required technological keystones, the Indian Human Spaceflight Programme was accepted and formally announced by the Prime Minister on 15 August 2018.
- Gaganyaan is an Indian crewed orbital spacecraft intended to be the basis of the Indian Human Spaceflight Programme.
- Gaganyaan is expected to carry three people into space for seven days. The largely autonomous capsule will orbit the Earth in the low earth orbit of 300-400 Km.
- The crewed vehicle is planned to be launched on ISRO's GSLV Mk III in December 2021. HAL has manufactured the crew module.
- With this, India could potentially become the fourth country to send a man to space, after the erstwhile USSR, the US and China. Denmark also has a manned space flight scheduled for 2022.

Timeline:

- Two unmanned Gaganyaan missions will be undertaken prior to sending humans.
- As per ISRO schedule, the first and second unmanned flights would be sent in orbit within 30 and 36 months beginning from August 2018.
- The Indian Space Research Organisation (ISRO) is planning to fly the first unmanned test mission carrying a humanoid ahead of its crewed Gaganyaan mission.

4. Merchant Discount Rate

Why in News?

- Finance Ministry has announced that the Merchant Discount Rate (MDR) charges for businesses with over ₹50 crore annual revenues will be waived off from January 1, 2020.

About Merchant Discount Rate:

- MDR is charge or fee imposed on merchant by bank for accepting payment from their customers in credit and debit cards every time card is used for payments (like swiping) in their stores.
- MDR charges are usually shared in pre-agreed proportion between them and are expressed in percentage of transaction amount.

- MDR compensates bank issuing card, bank which puts up swiping machine (Point-of-Sale or PoS terminal) and network providers such as MasterCard or Visa for their services.
- In India, the RBI specifies maximum MDR charges that can be levied on every card transaction.
- But now, Finance Ministry has notified that Digital transactions made using RuPay credit cards, or UPI QR codes will not face additional charges for merchants or customers from the beginning of next year.
- All shops, business establishments and companies with an annual turnover of ₹50 crore or more have been mandated to offer these modes of payment to customers.

Significance of the Move:

- The move will encourage use of digital transactions.
- It will eventually reduce the physical form of currency increasing the net amount held by the banks.
- The banks shall then absorb the costs from such savings that accrues to them.
- The government has already amended two laws — the Income Tax Act and the Payments and Settlement Systems Act which are related to this move.

5. Biomarkers

Context:

- The Researchers identified gene biomarkers that can be used for early diagnosis of the brain tumor called glioblastoma.

About Biomarkers:

- It is basically medical signs of a particular biological state of individuals that can be observed.
- In other words, biomarkers are any substance, structure, or process that can be measured in the body to predict the incidence of a disease. For instance, cholesterol levels in blood, pulse, sugar level in urine, blood etc.
- Its presence indicates whether there is a disease or health state and gives a detailed picture of how healthy a person is.
- It is not only important to determine the presence of a disease, but also the effects of treatments, interventions, and unintended environmental exposure to chemicals, nutrients etc.

Application of Biomarker:

- The DNA or RNA markers, that indicate genetic abnormalities, have helped in targeted therapies to kill only the cancer cells leaving out the healthy ones.
- Every biological system has its own specific biomarkers. For example, blood pressure, heart rate, cholesterol, triglycerides and fasting glucose levels, body mass index (BMI) is used for assessing conditions such as obesity and metabolic disorders.
- Recently the principles of biomarkers are being used in detection, screening, diagnosis, treatment and monitoring of cancer.

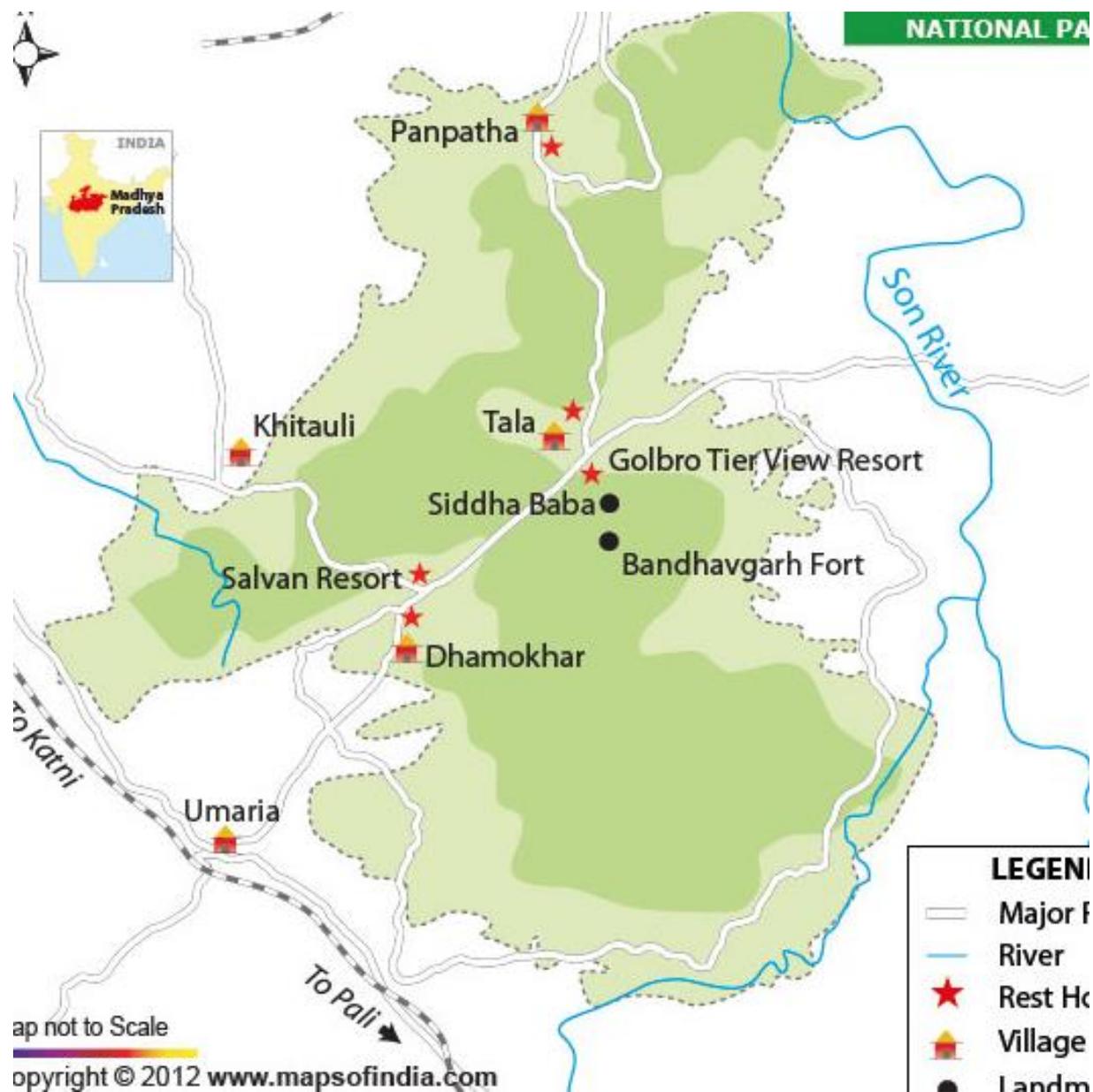
6. Bandhavgarh National Park

Why in News?

- Madhya Pradesh has recently got its first elephant colony.

About Bandhavgarh National Park:

- It is located in the Umaria District of Madhya Pradesh.
- It was declared a national park in 1968 and then became Tiger Reserve in 1993. The famous for White Tigers of Rewa were discovered here.
- Its name has been derived from the most prominent hillock of the area of Umaria.
- It has been divided into three major zones named as Tala, Magdi and Bamera out of which the Tala zone attracts major number of tourists by offering the tiger sighting opportunities.
- It beholds the largest breeding population of leopards and various species of deer.
- It also includes Nilgai, Chau Singha, Chital, Chinkara, Wild Boar and sometimes a Fox or Jackal.
- It consists of mixed vegetations ranging from tall grasslands to thick Sal forest and so is the perfect habitat of variety of animals and birds.



7. Dadasaheb Phalke Award

Why in News?

- Recently, the megastar Amitabh Bachchan is awarded with Dadasaheb Phalke Award.

About Dadasaheb Phalke Award

- It is awarded by President of India at Rashtrapati Bhawan.
- It is introduced by the government in 1969 and it was awarded for the first time to Devika Rani, “the first lady of Indian cinema”.

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- It is the country's highest film honour conferred for "Outstanding contribution for the growth and development of Indian cinema".

Dadasaheb Phalke:

- He is known as "Father of Indian Cinema".
- He directed India's first feature film Raja Harischandra (1913).
- He is an Indian producer, director, and screenwriter.

