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Dragon Capsule

- Crew Dragon is a part of the Dragon 2, a class of reusable spacecraft developed and manufactured by American aerospace manufacturer SpaceX.
- It is the 5th class of US spacecraft to take human beings into orbit, after the Mercury, Gemini, Apollo and Space Shuttle programs.
- Falcon 9, which carried the spaceship into the orbit, was also built by SpaceX.
- It is done under the Demo-2 Mission of NASA and SpaceX.
- The Demo-2 mission is part of NASA's Commercial Crew Program with the aim of developing reliable and cost-effective access to and from the International Space Station.
- Recently, dragon capsule returned back to earth after its short test flight, this clears the way for possible tourist flights in the near future.
- It was the first splashdown by U.S. astronauts in 45 years, with the first commercially built and operated spacecraft to carry people to and from orbit.
- The last time NASA astronauts returned from space to water was on July 24, 1975, in the Pacific to end a joint U.S.-Soviet mission known as Apollo-Soyuz.

Hammer Missile

- Highly Agile Modular Munition Extended Range Missiles (HAMMER) is a medium-range modular air-to-ground weapon designed for the French Air Force and the Navy.
- It a rocket-enabled precision missile with a range of 60 km perfectly suited for high altitude.
- India has decided to fit HAMMER missiles on the newly-acquired Rafale jet aircraft
- Earlier Rafale jets with HAMMER missiles carried out airstrikes in Libya, Afghanistan, Iraq, and Syria.
- Apart from the HAMMER missiles, the Rafale aircraft will also be armed with beyond- visual range missiles like Meteor, SCALP, and MICA,

increasing their ability to take on incoming targets from a distance.

Munitions and their origins

- **HAMMER -** Highly Agile Modular Munition Extended Range Missile – Made in France
- **MICA -** Fire and Forget short and Medium-Range Missile System – Made in France
- **Meteor -** Radar guided beyond-visual-range air-to-air missile – Made in France
- **SCALP -** Beyond visual range air to air missile – Made in France
- **SPICE -** Smart, Precise Impact, Cost-Effective Air-to-Surface missile – Made in Israel
- **Strom Shadow -** General Purpose Long Range Cruise Missile – Made in UK

Ammonium Nitrate

- Ammonium nitrate (NH_4NO_3) is one of the world's most widely used fertilizers.
- It is produced as small porous pellets, or 'prills',
- Ammonium nitrate does not burn on its own, instead it acts as a source of oxygen that can accelerate the combustion (burning) of other materials.
- Ammonium nitrate prills provide a much more concentrated supply of oxygen than the air around us.
- This is why it is effective in mining explosives, where it's mixed with oil and other fuels.
- At high enough temperatures, however, ammonium nitrate can violently decompose on its own.
- This process creates gases including nitrogen oxides and water vapour.
- It is this rapid release of gases that causes an explosion.
- Recently there was an ammonium nitrate blast in Lebanese capital Beirut injured many.

Nitrogen di-oxide

- Nitrogen dioxide (NO_2) is a red, bad-smelling gas.
- An ammonium nitrate explosion produces massive amounts of nitrogen oxides.
- Nitrogen oxides are commonly present in urban air pollution, and can irritate the respiratory system.
- Elevated levels of these pollutants are particularly concerning for people

with respiratory conditions.

NGT order on ground water extraction

- The National Green Tribunal (NGT) has called for commercial entities to follow new rules for getting permission to extract groundwater.
- Environmental Impact Assessments (EIA) will now form the basis of granting such permissions.
- The Union Ministry of Jal Shakti and the Central Ground Water Board (CGWB) were ordered by the NGT to ensure no general permission was given for withdrawing groundwater, particularly to any commercial entity.
- Under the order, plants involved in commercial extraction of ground water will undergo individual assessment through an expert committee.
- All overexploited, critical and semi-critical (OCS) assessment units must undergo water mapping.
- Water management plans need to be prepared for all OCS assessment units in the country based on the mapping data, starting with overexploited blocks.
- NGT had also mentioned permission to extract groundwater must be for specified times and quantity of water, not for perpetuity.
- It must be necessarily subject to digital flow meters, which cannot be accessed by proponents, with mandatory annual calibration by the authorized agency at proponents.

Section 5 of Environment Protection Act

- Section 5 of the Environment Protection Act that allows the Centre to shut down industrial units that grossly violate the law.
- **Violation Committee Rules of MoEFCC -** These rules allow industrial projects in violation of environmental laws to apply to a special panel of experts called the 'Violations Committee' of the MoEFCC, provided they meet certain criteria and make appropriate modifications become compliant operations.
- The Union Ministry of Environment, Forests and Climate Change ordered closure of the LG Polymers plant in Vishakapatnam, Andhra Pradesh.
- The ministry has also sought updated information on whether the company had abided by the MSIHC rules by MoEFCC.
- Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989 prescribe how hazardous and industrial chemicals ought to be stored.
- From LG Polymers plant styrene gas leaked on May 17, 2020.

- The chemical factory had been working since 1997 without appropriate clearances and had applied for clearance, in 2018, under rules made by the MoEFCC itself.
- LG Polymers had applied to violation committee and its case was under consideration.

Hoolock Gibbons

- Hoolock Gibbons are native to eastern Bangladesh, Northeast India and Southwest China.
- The tailless Hoolock Gibbon is the only ape found in India.
- In the areas of high tree canopies, the gibbons swing from branch to branch.
- They cannot adapt to living on the ground and cannot bear the high temperatures brought about by the loss of green cover.
- The Hoolock Gibbon is categorized into two types:

1. **Western hoolock gibbon -** It inhibits in all the states of the north-east, restricted between the south of the Brahmaputra River and east of the Dibang River.

- It is listed as Endangered under the International Union for Conservation of Nature (IUCN) Red List.

2. **Eastern hoolock gibbon -** It inhabits specific pockets of Arunachal Pradesh and Assam in India, and in southern China and north-east Myanmar outside India.

- It is listed as Vulnerable under the IUCN Red list.
- In India, both the species are listed on Schedule 1 of the Indian (Wildlife) Protection Act 1972.

Source: Down to Earth, the Hindu, Times of India

SHANKAR IAS PARLIAMENT
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