Prelim Bits 24-12-2021 | UPSC Daily Current Affairs

PLI Scheme for Semiconductor Goods

The Centre sanctioned Rs. 76,000 crore under the production-linked incentive (PLI) scheme to encourage the manufacturing of various semiconductor goods within India.

- **Purpose** - The scheme comes amid an inadequate supply of semiconductor chips in the global market which has severely affected the supply of goods such as cars, laptops and phones.
- **Aim** - Under the PLI scheme, the Centre will offer financial support to companies that want to manufacture semiconductor goods in India.
- The subsidy will bring down the production costs of companies manufacturing such goods, and thus encourage them to set up new factories and other facilities.
- It is seen as an attempt to build a strong semiconductor industry that would put an end to the country's reliance on imports to meet its semiconductor needs and is also expected to help in the creation of jobs.
- **Pros** - The scheme will give a boost to the domestic semiconductor industry. It is estimated to create over 1 lakh new jobs either directly or indirectly.
- Further, increased spending by the Government in such schemes is also seen as a step to boost demand in the economy.
- The Centre, by offering subsidies to businesses, can play a crucial role in developing India as a global hub for electronic goods.
- **Cons** - Critics argue that the **burden of subsidies** (to encourage any industry) falls on taxpayers.
- These taxpayers will have lesser incentive to work as taxes on them rise.
- Further, subsidies can lead to **misallocation of resources**.
- Investment decisions in a market economy are generally dictated by the preferences of consumers.
- Projects that would otherwise not be undertaken by businesses due to lack of demand from consumers, however, may suddenly become viable when the Government subsidises part of the production costs.
- These projects may be viable only as long as taxpayers are forced to fund the required subsidies.
- Finally, the **risk of cronyism** is high when politicians and bureaucrats get to decide which company or sector receives subsidies.
- **Related Links** - PLI Scheme, Extending the PLI List, PLI Scheme for Drugs, PLI Scheme for Speciality Steel, PLI Scheme on White Goods, PLI Scheme for the Food Processing Industry, PLI Scheme for the Pharmaceuticals and IT Hardware sectors,

Reference

https://www.thehindu.com/news/national/explained-what-is-the-pli-scheme-for-semiconductor-goods/article38017584.ece

UV Index

- The UV index is produced at the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA).
- The UV index tells you how much UV radiation of different wavelengths is around **at ground level on a given day**, and the potential of these wavelengths to harm your skin.
- In 2002, the WHO devised the UV index in an effort to make people around the world more aware of the risks.
- The index boils down several factors into a single number that gives you an idea of how careful you need to be in the sun.
- A score of 1 or 2 is low, 3 to 5 is moderate, 6 or 7 is high, 8 to 10 is very high, and 11 and above is extreme.
- **Factors** - The UV index reported is usually the **daily maximum** - that's the highest it will be all day.
- How high it gets depends on factors, including your location, the time of year, amount of cloud cover, and ozone & pollution in the atmosphere.
- The index tends to be higher closer to the Equator and at high altitudes, as the sunlight has to pass through less air before it reaches the ground.
- Another reason is that Earth is very slightly closer to the Sun in the southern hemisphere's summer than the northern summer, meaning the sunlight is a few percent brighter. So, UV is also higher.
- Third reason is the 'hole' in the ozone layer. The ozone layer in the upper atmosphere, which absorbs some UV-B, is thinner towards the South Pole.
- Finally, the air in the southern hemisphere generally has less smoke, dust and other small particle pollution than in the northern hemisphere.
- While this makes the air nicer to breathe, pollution does absorb or block some UV radiation.
- Despite changing in different locations, the UV level is also changing over time. The UV levels have increased in recent decades.

UV Radiation

- Ultraviolet (UV) radiation is a component of sunlight. It is the light with wavelengths too short for our eyes to see, from 400 to 10 nanometres.
- The important kinds of UV radiation are,
    1. UV-A, with wavelengths from 400 to 315 nanometres,
    2. UV-B with wavelengths from 315 to 280 nanometres and
    3. UV-C has shorter wavelengths, but are mainly blocked by the atmosphere so we don't need to worry about it.
- **Impact** - In the short term, the exposure to UV can cause tanning and sunburn.
- In the longer term, too much exposure to UV can cause cataracts and skin cancer.
- UV-A and UV-B both contribute to skin damage, ageing and skin cancer.
- But UV-B is the more dangerous: it is the major cause of sunburn, cataracts and skin cancer.

Reference

https://indianexpress.com/article/technology/science/uv-index-an-expert-explains-what-how-its-calculated-7685208/

Abhyas

DRDO has successfully conducted the flight test of Indigenously developed Abhyas from Integrated Test Range (ITR), Chandipur off the coast, Odisha.

- Abhyas is a High-speed Expendable Aerial Target (HEAT) System developed to meet the requirement of aerial targets of Indian Armed Forces.
- It is designed for autonomous flying with the help of an autopilot.
- It was developed indigenously by the Aeronautical Development Establishment (ADE), Bengaluru-based DRDO laboratory.
- It is controlled from a ground based controller and indigenously developed MEMS-based Inertial Navigation System.
- It also has the Flight Control Computer that helps it to follow the pre-designated path in a fully autonomous mode.
- It is powered by two boosters which provided the initial acceleration during the launch and a small turbo jet engine is used to sustain high subsonic speed with long endurance.

Reference

1. https://pib.gov.in/PressReleasePage.aspx?PRID=1784674
2. https://www.livemint.com/news/india/drdo-successfully-tests-abhyas-high-speed-expendable-aerial-target-11634903618687.html

Steller's Sea Eagle

A long way from its home in Asia, a rare Steller's sea eagle was spotted around Taunton River, Massachusetts.

- Steller's sea eagles (Haliaeetus pelagicus) are especially revered in Japan, where they are known as *O-washi*.
- **Habitat** - They are native to Russia, China, Korea and Japan.
- They are believed to breed only in far eastern Russia, along the coasts and surrounding islands of the Sea of Okhotsk and Bering Sea.
- They are most common on the Kamchatka Peninsula.
- **Migration** - Each winter, many Steller's sea eagles migrate from their breeding grounds to Japan and Korea or even farther afield.
- Other individuals do not migrate, but simply move to open water as winter approaches.
- **Diet** - Open water provides these eagles with their main food sources along coastlines and lakes. Like other eagles, Steller's also steal food from other birds.

Protection Status	
IUCN Red List	Vulnerable (Total population of about 4,000)

Reference

1. https://indianexpress.com/article/technology/science/rare-stellers-sea-eagle-spotted-long-way-from-home-7685084/
2. https://www.nationalgeographic.com/animals/birds/facts/stellers-eagle

Anti-Doping

National Dope Testing Laboratory (NDTL) regains the World Anti-Doping Agency (WADA) accreditation. With this, NDTL's Anti-Doping testing and activities will be resumed with immediate effect.

- **Doping** is defined by the International Olympics Committee (IOC) as, 'the use of any method or substance that might harm the athlete, in a quest to gain an unfair advantage, over his or her fellow competitors'.
- Doping are the performance enhancing drugs and dietary supplements that have been around since the ancient Olympic Games.
- These drugs are considered helpful to improve athletic performance.
- The use of banned drugs by athletes is referred to as 'doping'.
- **Types of Doping**
    1. Performance enhancing substance (Stimulants, Anabolic Steroids, Peptide hormones, Beta-2 Agonist, Narcotics, Diuretics, and Cannabinoids)
    2. Physical methods (Blood doping and Gene doping)

  Blood doping is the process of increasing the Red blood cells by blood transfusion.

  It increases haemoglobin allows higher amount of Oxygen to fuel an athlete's muscles.

  This can improve stamina and performance, particularly in long distance events.

  Gene doping is the non-therapeutic use of cells, genes, genetic elements or of the modulation of gene expression, having the capacity to improve athletic performance.

- Anti-doping means opposing or prohibiting illegal doping to improve athletic performance.
- Anti-doping authorities state that using performance-enhancing drugs goes against the 'spirit of sport'.
- **Related Links** - Human Growth Hormone, Court of Arbitration for Sport

National Anti Doping Agency

- National Anti Doping Agency (NADA) was set up as registered society under the Societies Registration Act of 1860 in 2005.
- It was set up with a mandate for Dope free sports in India.
- The primary objectives are
    1. To implement anti-doping rules as per WADA code,
    2. To regulate dope control programme,
    3. To promote education and research and
    4. To create awareness about doping and its ill effects.

World Anti-Doping Agency

- The World Anti Doping Agency (WADA) is a foundation created through a collective initiative led by the International Olympic Committee (IOC).
- Established in 1999 as per the Lausanne Declaration on Doping in Sport, the WADA is an international independent agency composed and funded equally by the sport movement and governments of the world.
- It was found to promote, coordinate and monitor the fight against drugs in sports.

- Its key activities include scientific research, education, development of anti-doping capacities, and monitoring of the World Anti-Doping Code.
- This Code is the document harmonizing anti-doping policies in all sports and all countries. The provisions of this Code are enforced by the UNESCO International Convention against Doping in Sport.
- The aims of the Council of Europe Anti-Doping Convention, the US Anti-Doping Agency and National Anti Doping Agency (India) are also closely aligned with those of WADA.

Reference

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2. https://ncert.nic.in/textbook/pdf/kehp107.pdf
3. https://www.wada-ama.org/en/who-we-are
4. https://www.nadaindia.org/en/about-us

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