Prelim Bits 27-07-2023 | UPSC Daily Current Affairs

Reservation for Transgender Persons

The Social Justice Ministry's responded to a contempt petition accusing the government of not implementing the directions in the 2014 judgment.

Reservation status of Transgender persons

- **Reservation –** The Centre has told the Supreme Court that transgender persons can avail of any of the existing 50% reservation.
- **SEBC –** They can use the reservation in admissions and government jobs already available to Scheduled Caste, Scheduled Tribe and Socially and Educationally Backward Communities (SEBC) across the country.
- **EWS –** The government said transgender persons could also benefit from the 10% quota granted to the Economically Weaker Sections (EWS) of the society.
- However, the Ministry has not mentioned reservation for the transgender community as a separate class.

> *The benefits of any of the reservation, including the four reservations [SC/ST/SEBC/EWS], can be availed by the marginalised and eligible population of the country, including transgender persons.*

2014 Judgement

- **NALSA –** Supreme Court in its 2014 judgment in the National Legal Services Authority (NALSA) case had directed the Centre and the State governments to take steps for the welfare of the transgender persons.
- It directed to treat transgender persons as socially and educationally backward classes of citizens and extend all kinds of reservation in cases of admission in educational institutions and for public appointments.
- The judgment had also expressly directed the Centre and State governments to protect transgender persons from discrimination in employment and access to welfare schemes.
- It had held that educational institutions were obliged to provide them inclusive education.
- **Third gender –** The judgment had declared that hijras, eunuchs, apart from binary genders, be treated as third gender for the purpose of safeguarding their fundamental rights.

> *Hijras are often born male but look and dress in traditionally feminine ways.*

Eunuchs are male who had their testicles removed.

- **Division Bench –** A Division Bench of the apex court had upheld transgender persons' right to decide their self-identified gender.
- It had given legal recognition to their gender identity.

The transgender community form a reasonably sizeable class as per the statistics available in the 'National Portal for Transgender Persons' launched by the government on November 25, 2020.

References

1. The Hindu – Transgender persons can avail of any of quota benefits available to the marginalized
2. Hindustan Times – Quota benefits only for marginalized transgender persons, Centre tells SC

Global Education Monitoring Report 2023

UNESCO endorses banning smartphones from schools.

The Report

- The Global Education Monitoring Report 2023, titled Technology in Education: A Tool on Whose Terms was released by the United Nations Educational, Scientific and Cultural Organization (UNESCO).
- The report has endorsed banning smartphones in schools in situations where technology integration does not improve learning or if it worsens student well-being.
- **Distraction –** It highlighted that mere proximity to a mobile device was found to distract students and to have a negative impact on learning in 14 countries.
- **Performance –** It also cited research studies to point out that banning mobile phones from schools improves academic performance, especially for low-performing students.
- **Digital infrastructure –** The report also flagged the higher costs of delivering basic education where there is a dependency on the setting up of digital infrastructure.
- The situation could worsen the problem of unequal access in low-income countries.
- **Privacy –** Another major concern around the indiscriminate use of digital technology in education was children's privacy.
- Children's data are being exposed, yet only 16% of countries explicitly guarantee data privacy in education by law.

Globally, one in four countries has imposed such bans either as law or as a policy out of concern for data privacy, safety, and child's well-being.

UNESCO

- UNESCO is the United Nations Educational, Scientific and Cultural Organization.
- It contributes to peace and security by promoting international cooperation in education, sciences, culture, communication and information.
- **Knowledge –** UNESCO promotes knowledge sharing and the free flow of ideas to accelerate mutual understanding and a more perfect knowledge of each other's lives.
- **SDG Goals –** UNESCO's programmes contribute to the achievement of the Sustainable Development Goals defined in the 2030 Agenda, adopted by the UN General Assembly in 2015.

References

1. The Hindu – UNESCO endorses banning smartphones from schools
2. UNESCO – UNSECO issues urgent call for appropriate use of technology in education

Atmosphere & Climate Research-Modelling Observing Systems & Services (ACROSS) Scheme

- It is *central sector scheme* that pertains to the atmospheric science programs of the *Ministry of Earth Sciences (MoES)*.
- The sub-schemes under the ACROSS scheme are multi-disciplinary in nature and will be implemented in an integrated manner through 4 institutes.
- **The Institutes –** The four institutes are:
    1. India Meteorological Department (IMD)
    2. Indian Institute of Tropical Meteorology (IITM)
    3. National Centre for Medium Range Weather Forecasting (NCMRWF)
    4. Indian National Center for Ocean Information Services (INCOIS)
- They will cover all the aspects of the weather and climate.
- **The sub-schemes –** Each institute has designated role for accomplishing the above tasks through the following schemes:
    1. Upgradation of Forecast System
    2. Weather & Climate Services
    3. Atmospheric Observations Network
    4. Numerical Modelling of Weather and Climate
    5. Monsoon Mission III
    6. Monsoon Convection Clouds and Climate Change (MC4)
    7. High Performance Computing System (HPCS)

References

1. PIB – Atmosphere' & Climate Research-Modelling Observing Systems & Services (ACROSS)
2. MOES – ACROSS

Markarian 421

NASA's IXPE Mission unveils twisted mysteries of the Supermassive Black Hole Markarian 421.

Markarian 421

- **Black hole –** It is a supermassive black hole that is firing high energy particles directly towards Earth.
- Markarian 421 is situated about 400 million light years from Earth.
- **Ursa Major –** It is located in the constellation Ursa Major and is a strong source of gamma rays.

Blazar is the name given to black hole systems that have jets pointed at Earth and blazars can outshine all the stars in the galaxy that they inhabit.

- They are also often exceptionally bright since particles approach the speed of light.

Supermassive Black holes (vs) Stellar Black holes

Stellar Black holes	Supermassive Black holes
• Stellar-mass black holes are formed from the gravitational collapse of a single star or from the merger of two neutron stars. • Therefore, stellar-mass black holes have masses similar to the masses of stars. • More specifically, stellar-mass black holes have masses ranging from about 3 times the mass of our sun to about 50 times the mass of our sun.	• Supermassive black holes have a mass greater than about 50,000 times the mass of our sun. • They are typically millions to billions times the mass of our sun. • Supermassive black holes are far too large to have formed from the gravitational collapse of a single star. • Scientists do not currently know how supermassive black holes form.

Supermassive black holes are always found at the center of a galaxy and almost all galaxies have a supermassive black hole at its center, which suggest that each supermassive black hole is formed as part of the formation of its galaxy.

Imaging X-ray Polarimetry Explorer (IXPE) Mission

- **X-Rays –** IXPE is NASA's first mission to study the polarization of X-rays from many different types of celestial objects.
- It discovers the secrets of some of the most extreme objects in the universe, the remnants of supernova explosions, powerful particle streams spit out by feeding black holes, and more.

References

1. The Indian Express – A supermassive black hole is firing high-energy particle jet towards Earth
2. NASA – IXPE Mission

Layers of the Atmosphere

SpaceX rocket launch may have punched a hole in Earth's Ionosphere.

- Earth’s atmosphere has 5 major and several secondary layers.

Troposphere (about 12kms long)

- With its height lower at Earth’s poles and higher at the equator.
- It is tasked with holding all the air needed for breathing and also contains about 99% of all water vapor and aerosols.
- Temperatures go down at higher altitudes, since the heat found in the troposphere is generated by the transfer of energy from Earth’s surface.

Stratosphere (12-50 Kms)

- The Ozone Layer, which protects us from the Sun’s harmful ultraviolet radiation is located in this layer.

Mesosphere (50-80 Kms)

- The mesosphere gets progressively colder with altitude.
- The top of this layer is the coldest place found within the Earth system, with an average temperature of about minus 85 degrees Celsius.

Thermosphere (80-700 Kms)

- The aurora borealis and aurora australis are sometimes seen here, and its lower part consists of the Ionosphere.
- The International Space Station orbits in the thermosphere.
- **Ionosphere –** The Ionosphere refers to a series of regions in the Earth’s atmosphere containing electrically charged atoms and molecules.
- It plays an important role in communications and navigation systems since radio and GPS signals travel through this layer or rely on bouncing off it to reach their destination, according to NASA.
- In both scenarios, changes in the ionosphere’s composition and density can disrupt signals.

Exosphere (700 – 10,000 Kms)

- It is the highest layer of Earth’s atmosphere and, at its top, merges with the solar wind.
- The aurora borealis and aurora australis are sometimes seen in its lowest part.
- Most Earth satellites orbit in the exosphere.

Edge of the Outer Space (100kms above Earth’s surface)

- **Karman line –** While there is no clear boundary between where Earth’s atmosphere ends and outer space begins, most scientists use a delineation known as the Karman line.

References

1. The Indian Express – SpaceX rocket launch punches a hole in Earth’s Ionosphere
2. NASA – Earth's Atmosphere: A Multi-layered Cake

