

## Sedition law

- The Law Commission's recommendation that the offence of sedition be retained in penal law, albeit with some safeguards, flies in the face of current judicial and political thinking that the country may not need this colonial vestige any more.
- Section 124A of the IPC, which describes sedition, seeks to punish speech or writing that brings or tries to bring into hatred or contempt, or excites or tries to excite disaffection towards, the government established by law.
- Its validity was upheld by the Supreme Court as far back as 1962, but with the reservation that it would be a constitutionally permissible restriction on free speech, only if the offence was restricted to words that had a tendency to incite violence or cause public disorder
- Section 124A was incorporated in the Indian Penal Code in 1870. The purpose was to suppress the voice of Indians who spoke against the British Raj, as the government did not want any voice of dissent or protest
- The first major case was Queen Empress vs Bal Gangadhar Tilak 1897 in which the Bombay Court found Bal Gangadhar Tilak guilty of sedition for writing a couple of articles in Kesari, a Marathi weekly, invoking Shivaji, which was interpreted as exciting disaffection towards the British government
- The judgment in Kedarnath vs State of Bihar (1962)-. The Court held that it is constitutionally valid for two reasons.
- One, sedition, though an offence against the government, is against the state because the government is a visible symbol of the state and the existence of the state will be in jeopardy if the government is subverted.
- Second, Article 19(2) imposes restrictions in the interest of the security of the state which has wider amplitude and which includes the law on sedition.
- Supreme Court had, in an attempt to declare sedition constitutionally valid, admittedly adopted the Federal Court's approach and held that Section 124A is valid but can be invoked only when the words or gestures have a tendency to incite violence.

## THE HINDU

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### Energy transition

- In 2020, cities dumped a whopping 29 trillion tonnes of carbon dioxide into the atmosphere
- An energy- system transition could

reduce urban carbon dioxide emissions by around 74%.

- With rapid advancements in clean energy and related technologies and nosediving prices, we have crossed the economic and technological barriers to implementing low-carbon solutions.
- The transition must be implemented both on the demand and the supply side.
- Mitigation options on the supply side include phasing out fossil fuels and increasing the share of renewables in the energy mix, and using carbon capture and storage (CCS) technologies.
- On the demand side, using the 'avoid, shift, improve' framework would entail reducing the demand for materials and energy, and substituting the demand for fossil fuels with renewables.
- Secondly, in order to address residual emissions in the energy sector, we must implement carbon-dioxide removal (CDR) technologies
- An established city can retrofit and repurpose its infrastructure to increase energy efficiency, and promote public as well as active transport like bicycling and walking.
- In fact, walkable cities designed around people can significantly reduce energy demand, as can electrifying public transport and setting up renewable-based district cooling and heating networks.
- A rapidly growing city can try to colocate housing and jobs by planning the city in a way that brings places of work closer to residential complexes, thus reducing transport energy demand.
- Such cities can also leapfrog to low-carbon technologies, including renewables and CCS.
- Energy systems are directly and indirectly linked to livelihoods, local economic development, and the socio-economic well-being of people engaged in diverse sectors.
- The energy supply needs to be balanced against fast-growing energy demand (due to urbanisation), the needs of energy security, and exports.
- Additional justice concerns include land dispossession related to large-scale renewable energy projects, spatial concentration of poverty, the marginalisation of certain communities, gendered impacts, and the reliance on coal for livelihoods.
- For instance, developing economies, including Nigeria, Angola, and Venezuela, owe a significant fraction of their gross domestic products (GDPs) to fossil-fuel exports.

- Transitioning away from these industries could devastate their economies, with the consequences landing particularly heavily on the workers employed in the fossil-fuel sector.
- Similarly, in developed countries, many communities suffer energy poverty and inequity due to high energy costs, low incomes, and inadequate infrastructure.

#### **THE HINDU**

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### **Internet as a fundamental right**

- Kerala announced that access to the Internet would be a basic right in the State, becoming the first State in the country to do so.
- The declaration came three years after the UN had passed a resolution recognizing Internet access as a basic human right.
- The announcement was accompanied by a detailed plan to ensure that it would become a ground reality, with the setting up of the Kerala Fibre Optic Network (KFON), through which Internet connections would be provided free of cost to 20 lakh below-poverty-line (BPL) families.
- The project is aimed at ensuring universal Internet access and narrowing the digital divide, which has become especially acute after

the COVID-19 outbreak.

#### **THE HINDU**

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### **Fermi energy and Fermi level**

- Fermi energy is a concept in quantum mechanics that usually refers to the energy difference between the highest and lowest occupied single-particle states in a quantum system of non-interacting fermions at absolute zero temperature.
- The highest energy level that an electron can occupy at the absolute zero temperature is known as the Fermi Level.
- The value of the Fermi level at absolute zero temperature ( $-273.15^{\circ}\text{C}$ ) is known as the Fermi energy. It is also the maximum kinetic energy an electron can attain at 0K. Fermi energy is constant for each solid.

#### **THE HINDU**

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### **Synchrotron Xray scanning tunnelling microscopy or SX-STM**

- X-rays are an important way to identify the type of a material.
- Scientists have improved this technology through the years so that the quantity of a sample required for identification has become very small
- A method called synchrotron X-ray

scanning tunnelling microscopy or SX-STM.

- The atom was hit with X-ray photons. As expected, the electrons in the atom absorbed only photons of certain frequencies.
- Photons of the other frequencies passed through.
- Using a spectroscope, the team determined which frequencies had been absorbed.
- This absorption spectrum is unique to each element and can be used to identify it.
- When electrons absorb the X-ray photons, they become excited and tunnel their way to the metal tip of the detector.
- There, a small voltage allows the electron to create an electric current, which is recorded and measured.
- Being able to identify a material using only one atom could, according to the group, revolutionise research in material science, quantum mechanics, and other areas.
- Germany is preparing to host the biggest air deployment exercise in NATO's history, a show of force intended to impress allies and potential adversaries.

- **THE HINDU**

## **Air Defender**

- The Air Defender 23 exercise starting on June 12 till June 23 will see 10,000 participants and 250 aircraft from 25 nations respond to a simulated attack on a NATO member country.

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