

NEWS TODAY

IBM releases first-ever 1,000-qubit quantum chip named Condor

- A quantum chip contains quantum bits (qubits) and serves as the processor for quantum computers.
- **About quantum computers:**
 - ⊕ A quantum computer harnesses quantum mechanics to deliver huge leaps forward in processing power.
 - ⊕ In contrast to traditional computers, quantum computers utilise qubits instead of bits for information storage.
 - ◆ Qubits can encode information as 0, 1, or both simultaneously, unlike the binary representation of bits (represented by 0's or 1's) in traditional computers.
 - ⊕ They function according to two key principles of quantum physics:
 - ◆ **Superposition (i.e., simultaneous 1 and 0):** Each qubit can represent both 1 and 0 at the same time.
 - ◆ **Entanglement (i.e., correlation of qubits):** Qubits in a superposition can be correlated with each other; i.e., the state of one (whether it is a 1 or a 0) can depend on the state of another.
 - ⊕ However, qubits exhibit high sensitivity and may cause calculation errors, and the problem worsens as quantum computer size increases.
 - ◆ Quantum error correction is believed to be the only way to produce a large-scale quantum computer with error rates low enough for useful calculations.



Initiatives in India to promote quantum computing

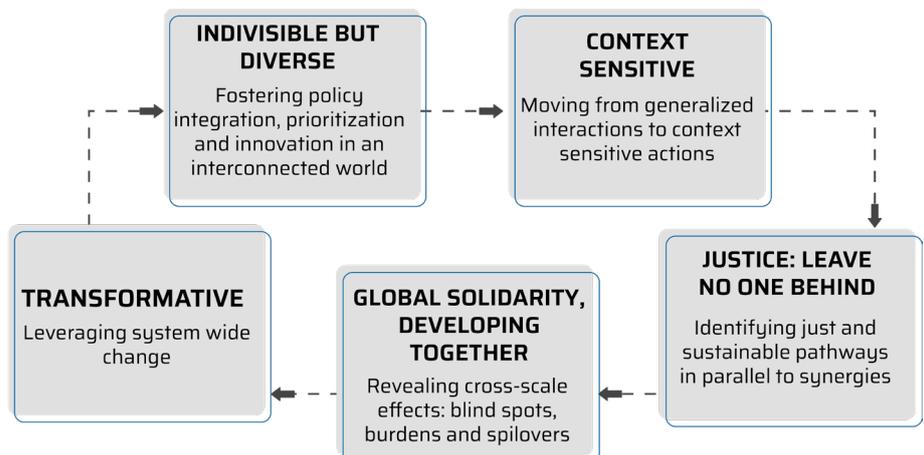
- ⊕ **National Mission on Quantum Technologies & Applications** for which Budget 2020-21, proposed Rs 8000 cr
- ⊕ **Quantum Computer Simulator (QSim) Toolkit** by Meity to provide support to researcher and students
- ⊕ **QuEST programme** at IIIT-Hyderabad
- ⊕ **Quantum computing application lab** by Meity in collaboration with amazon web

The Global Climate 2011-2020 Report released by World Meteorological Organization (WMO)

- WMO is a specialized agency of the United Nations, established in 1950.
- **Key Findings:**
 - ⊕ 2011-2020 is the warmest decade on record for both land and ocean.
 - ⊕ Northwest India, Pakistan, China and the southern coast of the Arabian Peninsula experienced wet decade.
 - ⊕ **Marine heat waves (MHW)** was experienced over 60% of the surface of oceans.
 - ◆ MHW occurs when the surface temperature of a particular region of the sea rises to 3 or 4 degree Celsius above the average temperature for at least five days.
 - ⊕ **Glaciers globally thinned by 1 meter per year.**
 - ◆ Antarctic ice sheet lost nearly 75% more ice (in comparison to 2001-2010).
 - ⊕ Sea level rose at an annual rate of 4.5mm/yr.

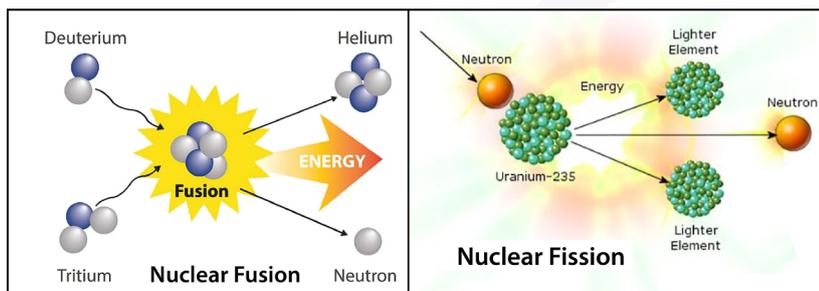
- **Key impacts on Human System:**
 - ⊕ 94% of all disaster displacements recorded over the last decade was due to weather related event.
 - ⊕ Four pillars of food security (access, availability, utilization, stability) are facing threat, posing challenges in achieving SDG 2 targets by 2030.

- **Key Recommendations:**
 - ⊕ Strengthening science-policy-society interaction to advance synergistic action.
 - ⊕ Develop a framework for action (refer to image).
 - ⊕ It will help decision-makers to identify synergistic action for just transition.



JT-60SA: World's biggest experimental nuclear fusion reactor inaugurated in Japan

- JT-60SA is a joint initiative between **European Union and Japan** and is a forerunner for under-construction **International Thermonuclear Experimental Reactor (ITER)**.
- **About ITER**
 - ⊖ ITER aims to **demonstrate nuclear fusion** as a clean green source of energy.
 - ◆ It is **located in France** and is a collaboration of **China, EU, India, Japan, Korea, Russia and US**.
 - ⊖ It aims to build the **world's largest tokamak**, a magnetic fusion device designed to **tap into the potential of fusion energy**.
 - ⊖ The tokamak **operates based on same principles** that power the **Sun and stars**.
 - ⊖ Using a robust magnetic field, it **fuses hot plasma**, and can reach **temperatures of over 150 million degrees Celsius** (ten times hotter than Sun's core).
- **Nuclear fusion** is a process in which **two or more light atomic nuclei fuse to produce a heavier nucleus** and release a **tremendous amount of energy**.
 - ⊖ In **nuclear fission**, atoms are split apart into lighter elements releasing energy. **All nuclear power plants use nuclear fission**.
- **Advantages of fusion:**
 - ⊖ Release of **abundant energy** and **fuel is nearly inexhaustible**.
 - ⊖ Neither produces **CO2** and other greenhouse gases nor radioactive waste.



Rajya Sabha passes Post Office Bill, 2023 to revitalise Post Offices

- Post Office Bill, 2023 will replace **Indian Post Office Act (IPOA), 1898**.
 - ⊖ **IPOA, 1898** was enacted during the tenure of Viceroy **Lord Elgin-II (1894-1899)**.
- There is a **need of new Act** as **IPOA, 1898** addresses mainly **mail services** provided through the Post Office.
 - ⊖ Also to **ensure better governance** for Post offices as their services have **diversified** beyond mails such as **India Post Payments Bank**, insurance schemes etc.
 - ◆ With time, they have emerged as a vehicle for **delivery of a variety of citizen centric services**.
- **Key Highlights of the Bill:**
 - ⊖ **Powers to intercept postal articles:** Bill empowers officers to **intercept, open or detain** an article which is being transmitted through **post on certain grounds**.
 - ◆ **Grounds include security of the State, friendly relations with foreign states, public order, emergency, public safety etc.**
 - ⊖ **Exemptions from liability:** PO will **not incur any liability** with regard to its **services**, except any liability prescribed through Rules.
 - ⊖ **Other: Director General of Postal Services** will be appointed to head India Post.
- **Key Concerns: Violation of right to privacy** (does not specify **procedural safeguards** for interception), exemption from liability may compromise consumer's interest, etc.



Online gaming industry signs a voluntary 'Code of Ethics for Online Gaming Industries'

- **Key highlights of code**
 - ⊖ Commitment to building a **safe, trusted, and accountable digital gaming industry** with a focus on **user protection**.
 - ⊖ Asks online gaming companies to:
 - ◆ Undertake a **know-your-customer (KYC)** as per applicable laws.
 - ◆ Specify on their sites the **manner of determination of winners, and the platform fee charged**.
 - ◆ Ensure that **deposits** for online gaming services are **utilised only for playing games** on the platform.
- **Need for Code:**
 - ⊖ **Preventing negative Impact:** India's gaming market is expected to grow from **\$2.8 billion in 2022 to \$5 billion by 2025**.
 - ◆ There is a need to **control unwarranted negative impact of online gaming activities** like **addiction and suicides** due to the loss of huge money.
 - ⊖ **Promoting Digital Economy:** Ensuring transparency and accountability is necessary since Online gaming an important part of vision of **IndiaTechade** and the **US\$ 1trillion Digital Economy**.
- **About Online Gaming**
 - ⊖ It refers to games that are **played over some form of computer network**, most often the Internet.
 - ⊖ **Ministry of Electronics and Information Technology (MeitY)** is the nodal ministry to regulate gaming.
 - ⊖ Governed under **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Amendment Rules, 2023**.

President of Kenya paid state visit to India to boost bilateral relationship

Key highlights:

- ⊕ **Signed five pacts** providing for **cooperation** in a range of areas.
 - ◆ It includes Sports, education, digital solution, energy, digital public infrastructure and healthcare.
- ⊕ **Joint vision document** was unveiled to scale up **maritime engagement** in the **Indian Ocean region (IOR)**.
 - ◆ It will help in combating piracy, drug trafficking and terrorism.
- ⊕ India also announced a USD 250 million **line of credit (LoC)** to Kenya for **modernisation** of the **agricultural sector**.
 - ◆ LoC is a **soft loan** (not a grant) provided at concessional interest rates to developing countries.

Key Aspects of Bilateral Relation:

- ⊕ **Diplomatic:** Kenya is a strong **partner** in the **East African Community (EAC)**.
 - ◆ Also, it is part of India's approach to emerge as the '**Voice of global south**'.
- ⊕ **Trade: India-Kenya Trade Agreement** was signed in 1981.
 - ◆ Under it, both countries accorded **Most Favoured Nation (MFN)** status to each other.
 - ◆ Under the **WTO** agreements, MFN principle emphasises that **countries cannot normally discriminate** between their trading partners.
 - ◆ **The Bilateral trade currently stands at 3.39 billion USD.**
- ⊕ **Maritime cooperation:** Both are members of **Indian Ocean Rim Association (IORA)**.
- ⊕ **Diaspora:** Approximately **80,000 people** of Indian origin are present in Kenya.



Also in News



Privilege Committee

- Rajya Sabha passed a motion to end suspension of an Member of Parliament (MP) following a recommendation by **privileges committee**.
- **About Privileges Committee:**
 - ⊕ It is a **parliamentary standing committee** present in both Houses of Parliament.
 - ◆ Consists of **15 members** in Lok Sabha (**10 in case of Rajya Sabha**) nominated by the **Speaker** (Chairman in case of Rajya Sabha).
- **Key Function:** Investigate questions involving the breach of **privileges** of House or members, as referred to it by presiding officer of Houses.



Chandrayaan-3 Propulsion Module

- ISRO has successfully returned the Chandrayaan-3's Propulsion Module **from lunar orbit to Earth's orbit**.
 - ⊕ It is a milestone in ISRO's goal to **bring back manned missions in the future**.
- It marks the **first instance of bringing an object back from lunar orbit**. It is also ISRO's **first demonstration of a gravity assist flyby** around another celestial body.
 - ⊕ It is a technique of using a **planet's or celestial body's gravity** to **redirect and accelerate a spacecraft toward Earth**.
- **Payload SHAPE** onboard the module will continue to conduct a **spectroscopic study of Earth's atmosphere** from Earth's orbit.



Open Source Software (OSS)

- Meta and IBM formed the **AI Alliance**, supporting an **open-source approach to AI development**.
- **OSS**, like Linux and Mozilla, are **developed via open collaboration**, and their source code is available for anyone to use, examine, alter and redistribute.
- OSS differs from **closed-source software** like Microsoft Word, which are **sold to end users by the creator or copyright holder**.
 - ⊕ Closed-source softwares **cannot be edited, enhanced or redistributed** except as specified by the copyright holder.
- India has adopted a **policy on adoption of OSS** and established **National Resource Centre for Free & Open-Source Software** to support OSS ecosystem.



Gram Manchitra

- **Ministry of Panchayati Raj (MoPR)** is promoting **Gram Manchitra** to facilitate **Spatial Planning** by the Gram Panchayat
- **About Gram Manchitra:**
 - ⊕ It is a **Geographic Information System (GIS) Application**, launched by MoPR in 2019.
 - ◆ It has been developed by **National Informatics Centre (NIC)**.
 - ⊕ It helps to perform **spatial planning at Gram Panchayat level with use of geo-spatial technology**.
 - ⊕ It provides single **Geo Spatial platform** to better visualize various **developmental works** and provide a decision support system for **Gram Panchayat Development Plan**.



Oil and Gas Decarbonization Charter (OGDC)

- OGDC has been officially launched at COP28 by UAE and Saudi Arabia.
- **About OGDC:**
 - ⊕ It is a **global industry Charter** dedicated to speeding up **climate action** and achieving high-scale impact across oil and gas sectors.
 - ◆ Currently, 50 companies, **collectively responsible for over 40% of global oil production**, have committed to OGDC.
 - ⊕ It is a key initiative under **Global Decarbonization Accelerator (GDA)**, launched at World Climate Action Summit recently.
 - ◆ GDA is focused on **three key pillars**.
 - ◆ It includes scaling energy system of tomorrow; decarbonizing energy system of today; and targeting methane and other non-CO2 greenhouse gases.



Environmental DNA (eDNA)

- Scientists found elusive **De Winton's Golden Mole** (*Cryptochloris wintoni*) for the 1st time in last 87 years with the help of **Environmental DNA (eDNA)** technique.
- **About eDNA Technique:**
 - ⊕ It is method for studying biodiversity and monitoring ecosystem changes.
 - ◆ In it, **collected DNA** is compared and matched with **reference DNA**.
 - ⊕ **eDNA** is nuclear or mitochondrial DNA that is released from an organism into the environment.
 - ◆ **Sources include secreted feces, mucous, etc.**
- **De Winton's Golden Mole** (IUCN status - Critically endangered) is endemic to South Africa.
- **Key features:** Completely blind and dwells entirely underground.



Arsenic contamination

- Twenty-five states, including **Bihar, Uttar Pradesh, Jharkhand, and Assam** have arsenic-contaminated **groundwater** according to data by Central Ground Water Board.
 - ⊕ Arsenic is a **naturally occurring, semimetallic element** widely distributed in the Earth's crust. It is **highly toxic in its inorganic form**.
 - ⊕ **Primarily geogenic**, these contaminations result from minerals in rocks or soil entering groundwater through chemical processes.
- **Early childhood exposure** is associated with **cognitive development issues** and **elevated mortality in young adults**.
- Long-term exposure can lead to **cancer, skin lesions, cardiovascular disease, diabetes, and arsenicosis**.



Bhide Wada

- Pune Municipal Corporation demolished Bhide Wada's dilapidated structures (in Maharashtra) to create a **national memorial for Mahatma Mahatma Jyotiba Phule and Savitribai Phule**.
 - ⊕ Bhide Wada is the place where they **established the first girls' school in 1848**.
- Hailing from the Dalit community, they **defied societal norms**, advocating for **women's education, equality, and justice**.
 - ⊕ **Savitribai Phule** is renowned as **India's first woman teacher**.
 - ⊕ Together they initiated the **Balhatya Pratibandhak Griha for pregnant widows** facing discrimination.
 - ⊕ In 1873, they founded the **Satyashodhak Samaj**, a society dedicated to truth-seeking.

Places in News



Philippines (Capital: Manila)

- A Strong earthquake of magnitude 7.6 sparked a tsunami warning in the Philippines.
- **Political Features:**
 - ⊕ It is an **archipelago** in **South-eastern Asia** between the **South China Sea** and the **Pacific Ocean**.
 - ◆ It is divided into **three island groups: Luzon** (largest island of country), **Visayas**, and **Mindanao**.
 - ⊕ It is bounded by **Philippine Sea, Celebes Sea, Sulu Sea and South China Sea**.
- **Geographical Features:**
 - ⊕ **Islands** are composed primarily of **volcanic rock** and **coral**.
 - ⊕ **Highest point:** Mount Apo (active volcano)
 - ⊕ **Largest Lake:** Laguna de Bay
 - ⊕ **Major Rivers:** Cagayan and Rio Grande de Mindanao.



AHMEDABAD



BHOPAL



CHANDIGARH



DELHI



JAIPUR



JODHPUR



GUWAHATI



HYDERABAD



LUCKNOW



PRAYAGRAJ



PUNE



RANCHI



SIKAR