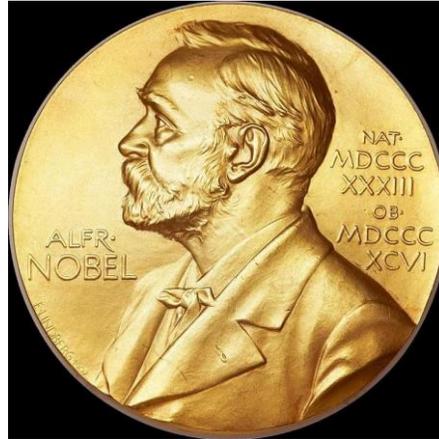




NOBEL PRIZES-AIR SPOTLIGHT



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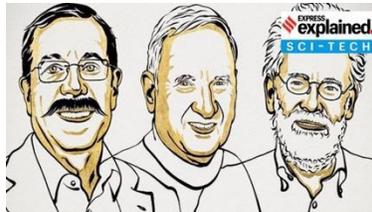
Context: Nobel prizes for the current year were awarded.

Nobel Prizes:

- Nobel Prizes are **awarded annually from a fund bequeathed for that purpose by the Swedish inventor and industrialist Alfred Nobel.**
- In the will he drafted in 1895, Nobel instructed that most of his fortune be set aside as a fund for the awarding of five annual prizes “to those who, during the preceding year, shall have conferred the greatest benefit on mankind.” (**Physics, Chemistry, Medicine, Literature, and Peace**).
- The **first distribution of the prizes took place on December 10, 1901**, the fifth anniversary of Nobel’s death.
- An additional award, **the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel**, was established in **1968** by the **Bank of Sweden** and was first awarded in **1969**.
- After Nobel’s death, the Nobel Foundation was set up to carry out the provisions of his will and to administer his funds.

- In his will, he had stipulated that four different institutions—three Swedish and one Norwegian—should award the prizes. From Stockholm, the Royal Swedish Academy of Sciences confers the prizes for physics, chemistry, and economics, the Karolinska Institute confers the prize for physiology or medicine, and the Swedish Academy confers the prize for literature.
- The Norwegian Nobel Committee based in Oslo confers the prize for peace.
- Each Nobel Prize consists of a gold medal, a diploma bearing a citation, and a sum of money, the amount of which depends on the income of the Nobel Foundation.
- Along with enormous prestige, the prize comes with a 10-million krona (\$1.1 million) cash award and a gold medal to be handed out at a ceremony in Oslo, Norway, on December 10, the anniversary of prize founder Alfred Nobel's death.

Physics:



- The Nobel Prize for Physics 2022 is being shared by three scientists, Alain Aspect, John F Clauser and Anton Zeilinger, for their work on quantum mechanics.
- The three conducted a series of experiments on something called entangled quantum states, where two separate particles behave like a single unit. Their pathbreaking results will have implications in the fields of quantum computers, quantum networks and secure quantum encrypted communication. Put simply, quantum computers use quantum mechanics to solve problems too complex for regular computers.
- Their experiments have conclusively established that the 'entanglement' phenomenon observed in quantum particles was real, not a result of any 'hidden' or unknown forces, and that it could be utilised to make transformative technological advances in computing, hack-free communications, and science fiction-like concept of 'teleportation'.

Chemistry:



- This year's Nobel Prize in Chemistry has gone to three scientists who, through their work, have made a strong case for adopting an alternative approach to producing new complex molecules in the laboratory or industry, which minimises waste and increases overall efficiency.
- 'Click Chemistry' demonstrates its vast potential in the pharmaceutical and other industries.
- The name has instead been taken from the click sound that airline seat belts make when they are fastened.
- The idea is that while trying to produce any particular compound or a complex molecule, one must look for starting molecules that easily react with each other. In other words, look for molecules that easily fit into each other, or 'click' with each other. It makes the resultant chemical reaction more efficient.
- Sharpless, who is the originator of the concept of 'Click Chemistry', has now won the Nobel Prize for the second time, making him only the fifth scientist to achieve this distinction. His previous Nobel Prize had come in 2001 in recognition of a different kind of work.



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Physiology:



- **Swedish scientist Svante Paabo won the 2022 Nobel Prize in Physiology or Medicine for discoveries “concerning the genomes of extinct hominins and human evolution.**
- The winner has been credited with transforming the study of human origins after developing approaches to allow for the examination of DNA sequences from archaeological and paleontological remains.
- Key achievements include sequencing an entire Neanderthal genome to reveal the link between extinct people and modern humans.
- The winner also brought to light the existence of a previously unknown human species called the Denisovans, from a 40,000-year-old fragment of a finger bone discovered in Siberia.
- In the process, Paabo, who runs the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany, also discovered the existence of an unknown sub-species of the human family, now called Denisovans, who lived around the same time as the Neanderthals.
- In fact, the ancestors of modern humans, Neanderthals and Denisovans co-existed for about 20,000 years, during which they not only interacted with each other, but also inter-bred, Paabo’s research has shown.
- In some populations of modern human beings, between one and three per cent of the genome has been found to originate from the Neanderthals.

Literature:



- **The Nobel Prize for Literature 2022 has gone to French author Annie Ernaux, for, “the courage and clinical acuity with which she uncovers the roots, estrangements and collective restraints of personal memory”.**
- Ernaux, 82, has seen a sharp increase in popularity in the English-speaking world since 2019, after her seminal work ‘**The Years**’, translated by **Alison L Strayer**, was shortlisted for the Man Booker international prize.
- Her book on her illegal abortion in the 1960s, ‘**Happening**’ (first published in 2001) has also been in the limelight after abortion rights were curtailed in the US.
- As the Nobel citation says, Ernaux’s work — ranging from a history of France to her first sexual experience and the shame around it to her mother’s illness and death to her abortion to her class-linked shame – meticulously mines her own memory and life experiences with “courage and clinical acuity”.
- Her treatment of her memories is unsparing but unembellished – she travels back to the moment she is writing about as completely as possible, without giving herself the benefit and wisdom of hindsight, putting on paper the raw vulnerability of the moment. As anchors, she uses songs, slogans, meals from the time she is writing about, which many say blurs the line between fiction and autobiography.
- Before the Nobel, Ernaux has won other awards and honours.
- According to her website, “Her works overall have received the French language prize and the Marguerite Yourcenar prize, as well as publication of her almost complete works to date in the Quarto edition by Gallimard in 2011 (Ernaux is the first woman writer to be published in this series in her lifetime).
- In 2014 she was awarded an honorary doctorate by the University of Cergy-Pontoise.”



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Peace Prize:



- The Nobel Peace Prize for 2022 **has been awarded to human rights advocate Ales Bialiatski from Belarus, the Russian human rights organisation Memorial, and the Ukrainian human rights organisation Center for Civil Liberties**, the Norwegian Nobel Committee announced.
- The laureates represent civil society in their home countries, said the committee
- **They have for many years promoted the right to criticise power and protect the fundamental rights of citizens.**
- **They have made an outstanding effort to document war crimes, human right abuses and the abuse of power. Together they demonstrate the significance of civil society for peace and democracy**
- With the awardees being from Belarus, Ukraine, and Russia, an implicit message has been sent about the ongoing conflict between Russia and Ukraine.

The three prize winners: Belarus's Ales Bialiatski

- Ales Bialiatski was one of the initiators of the democracy movement that emerged in Belarus in the mid-1980s.
- Before 1991, when the former Soviet Union fell and independent countries emerged, many countries in Central Asia and Europe saw pro-independence movements.
- Bialiatski is also credited with founding the organisation Viasna (Spring) in 1996 in response to the controversial constitutional amendments that gave the president dictatorial powers.
- Over time, Viasna evolved into a “broad-based human rights organisation that documented and protested against the authorities’ use of torture against political prisoners”, said the committee.

Russian human rights organisation, Memorial

- The committee said the organisation was established in 1987, “by human rights activists in the former Soviet Union who wanted to ensure that the victims of the communist regime’s oppression would never be forgotten.”
- Nobel Peace Prize laureate Andrei Sakharov, who won the prize in 1954, and human rights advocate Svetlana Gannushkina were among the organisation’s founders.
- “Memorial is based on the notion that confronting past crimes is essential in preventing new ones”, said the committee.
- It has been described as the largest human rights organisation in Russia, and in the present day, it helped in gathering information on “the political oppression and human rights violations in Russia”, as per the committee’s press release, which called it “the most authoritative source of information on political prisoners in Russian detention facilities”.

Ukrainian human rights organisation, Center for Civil Liberties

- The Center for Civil Liberties was founded in Kyiv in 2007 “for the purpose of advancing human rights and democracy in Ukraine”, said the committee.
- Centre describes itself as “One of the leading actors in Ukraine, influencing the formation of public opinion and public policy, supporting the development of civic activism, and actively participating in international networks and solidarity actions to promote human rights”.
- After Russia’s invasion of Ukraine in February 2022, the Center for Civil Liberties has engaged in efforts to identify and document Russian “war crimes” against the Ukrainian civilian population, according to the committee.

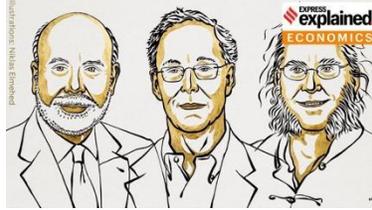


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Economics:



- For significantly improving “our understanding of the role of banks in the economy, particularly during financial crises,” the Sveriges Riksbank Prize in Economic Sciences for 2022 was awarded to three American economists: Ben S Bernanke, Douglas W Diamond and Philip H Dybvi.
- According to the press release, the research laid the foundation of some crucial questions on banks: “If banking collapses can cause so much damage, could we manage without banks? Must banks be so unstable and, if so, why? How can society improve the stability of the banking system? Why do the consequences of a banking crisis last so long? And, if banks fail, why can’t new ones immediately be established so the economy quickly gets back on its feet?”
- It added: “However, there is a conflict here: savers want instant access to their money in case of unexpected outlays, while businesses and homeowners need to know they will not be forced to repay their loans prematurely.”
- This lays out a fundamental problem that makes banks and money volatile and vulnerable to shocks sometimes.

<https://indianexpress.com/article/explained/explained-sci-tech/breakthroughs-in-quantum-tech-nobel-prize-2022-8190213/>

<https://indianexpress.com/article/explained/explained-sci-tech/nobel-prize-2022-making-chemistry-click-8191930/>

<https://indianexpress.com/article/explained/explained-global/who-are-the-nobel-peace-prize-winners-for-2022-8195649/>

<https://indianexpress.com/article/explained/explained-culture/nobel-prize-in-literature-2022-annie-ernaux-profile-8193812/>

<https://indianexpress.com/article/explained/explained-sci-tech/nobel-prize-physiology-or-medicine-swedens-svante-paabo-8188295/>



NEWS IN BRIEF: PRELIMS SPECIAL

INDIAN AIR FORCE DAY



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Context: Indian Air Force Day is celebrated on October 8 every year.

Details:

- The day aims to pay a tribute to the Air Force of India and acknowledge their contribution for a successful nation.
- As a part of the 90th anniversary celebration, nearly 80 military aircraft and helicopters participated in the Air Force Day fly-past on October 8 at the Sukhna Lake complex, Chandigarh.
- It is for the first time that the IAF decided to hold its annual Air Force Day parade and fly-past outside the Delhi NCR.
- On October 8, 1932, the former British Empire established the IAF.
- The IAF was used to attack Japanese bases in Burma in order to stop the Japanese army's advance toward India.



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- The IAF illustrated a range of aircraft, including Rafale, Prachand, Sukhoi Su-30, Jaguar, Chinook, Apache and Mi-17.
- Meanwhile, Sarang air display and Surya Kiran aerobatics teams also performed at the event, following the programme by the Akashganga Paratrooper team

<https://newsonair.com/2022/10/08/indian-air-force-celebrates-foundation-day-with-spectacle-pride/>

MODHERA



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Context: Prime Minister Narendra Modi will be declaring Modhera in Gujarat as a 24 x 7 solar-powered village on October 9.

Details:

- Under this, this first-of-its-kind project, Solar Rooftops have been set up in over 1300 rural houses at iconic Modhera village at the cost of 80 crore rupees.

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- It is India's first grid-connected megawatt-hours (MWh) scale battery energy storage system.
- This has resulted in more than 60 to 100 percent reduction in power bills.
- **PM will visit Modhshwari Goddess temple and the world-famous Modhera Sun temple.**
- The Modhera Sun Temple was made by King Bhima I of the Chalukya dynasty in the early 11th century.
- It is a temple made to honour the Sun God in Modhera village of Mehsana district on the bank of River Pushpavati.
- The temple is designed in such a way that during every equinox, the first ray of the rising sun would fall on a diamond placed on the head of the Sun God. This would also light up the shrine with a golden glow.
- The Sabha Mandap stands on 52 pillars, signifying the 52 weeks in a year. There are carvings of the sun on the walls to show its unity with air, water, earth and space.
- In 2014, Modhera Sun Temple entered the list of UNESCO World Heritage Sites.
- It enjoys the same significance as other two well-known sun-temples in Kashmir (Martand) and Orissa (Konark).
- The Gujarat Tourism hosts a three-day dance festival every year, known as the Uttarardha Mahotsav, at the temple every January after Makar Sankranti festival.

<https://newsonair.gov.in/News?title=PM-Modi-to-embark-on-a-3-day-visit-to-Gujarat-from-today%3b-to-dedicate-%26-lay-foundation-stone-of-projects-worth-over-Rs-14%2c500-crore&id=449056>



MANESAR ANTI-TERROR 2022



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Context: India is currently hosting the multilateral anti-terror exercise 'Manesar Anti-terror 2022' scheduled from October 8 to 13.

Details:

- It is under the framework of Shanghai Cooperation Organisation (SCO) Regional Anti-Terrorist Structure (RATS).
- It is stage 2 of the exercise and the Stage-1 of the Exercise was conducted from July 27 to August 1 by the National Counter Terrorist Forces of SCO Member Countries in their respective territories.
- The exercise is aimed at exchanging expertise, best practices and build synergy between the Counter Terrorism Forces of the SCO RATS Member Countries to enhance capabilities for conducting Anti-Terrorist operations and countering other security threats collectively.
- **Regional Anti-Terrorist Structure (RATS) one of the permanent organ of the Shanghai Cooperation Organisation and has its headquarters in Tashkent, Uzbekistan.** The objective of SCO RATS is to facilitate cooperation and coordination against Terrorism, Extremism and Separatism.

<https://newsonair.com/2022/10/10/india-hosts-joint-anti-terror-drill-with-russia-central-asian-countries/>



73RD RAISING DAY OF TERRITORIAL ARMY



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Context: The 73rd Raising Day of Territorial Army was celebrated across the country to commemorate its raising by the first Governor General C Rajagopalachari on this day in 1949.

Details:

- The Territorial Army has a number of Infantry and Engineer units affiliated to various regiments of the Indian Army, apart from 'Home and Hearth' battalions based on the concept of 'Sons of Soil'.
- The Territorial Army also has 10 Ecological Battalions working for restoration of environment in the country by carrying out afforestation in rugged and inhospitable terrain, reviving wetlands, restoring water bodies and contributing to Clean Ganga project.
- Territorial Army Battalions also perform specialist tasks as part of Indian Railways and Oil Sector Public Sector Undertakings PSUs.
- The Territorial Army (TA) was raised by the Britishers in 1920 through Indian Territorial Act of 1920 and it was org into two wings namely - 'The Auxiliary Force' for Europeans & Anglo-Indians and 'The Indian Territorial Force' for Indian Volunteers.
- After Independence Territorial Army Act was passed in 1948 and the Territorial Army was formally inaugurated by the first Indian Governor General Shri C Rajagopalachari on 09 Oct 1949.



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- The Territorial Army is part of Regular Army and its present role is to relieve the Regular Army from static duties and assist civil administration in dealing with natural calamities and maintenance of essential services in situations where life of the communities is affected or the Security of the Country is threatened and to provide units for Regulars Army as and when required.
- Any citizen between the age of 18-42 can be a part of the service.
- The pensionable age for a soldier below officer's rank in the TA is the same as that of a regular soldier — 15 years.
- The motto of the Territorial Army of India is '**Savdhani Va Shoorta**' (Vigilance and Valour).

<https://newsonair.gov.in/News?title=73rd-Raising-Day-of-Territorial-Army-celebrated-across-country&id=449104>



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INTERNATIONAL GIRL CHILD DAY



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In News

- **International Girl Child Day is observed on 11th October 2022.**
- The Day was declared by the United Nations in 2012.
- The objective is to promote more opportunity for girls and increases awareness about gender inequality faced by girls; limited access to education, nutrition, legal rights, and medical care.
 - Promote awareness about discrimination, violence against women and forced child marriage.

<https://newsonair.com/2022/10/10/wcd-ministry-to-organize-national-conference-on-skilling-in-non-traditional-livelihood-for-girls-betiyan-bane-kushal-on-oct-11/>