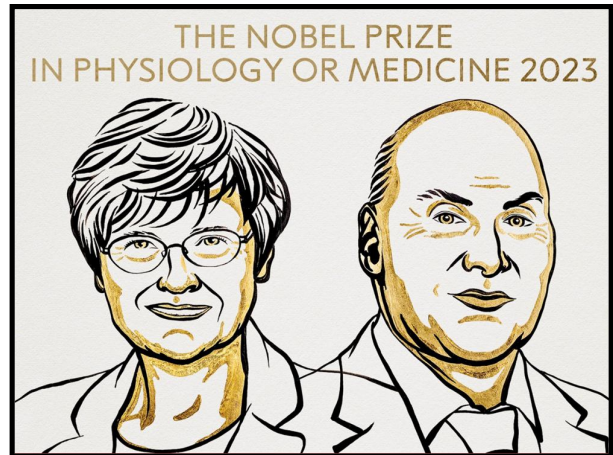




CURRENT AFFAIRS

1. Nobel Prize 2023 In Medicine or Physiology -

- Katalin Karikó and Drew Weissman “for their discoveries concerning nucleoside base modifications that enabled the development of effective mRNA vaccines against COVID-19”.
- The Nobel Assembly at Karolinska Institutet has decided to award the 2023 Nobel Prize in Physiology or Medicine.
- The discoveries by the two Nobel Laureates were critical for developing effective mRNA vaccines against COVID-19 during the pandemic that began in early 2020. Through their groundbreaking findings, which have fundamentally changed our understanding of how mRNA interacts with our immune system, the laureates contributed to the unprecedented rate of vaccine development during one of the greatest threats to human health in modern times.
- In our cells, genetic information encoded in DNA is transferred to messenger RNA (mRNA), which is used as a template for protein production.
- During the 1980s, efficient methods for producing mRNA without cell culture were introduced, called in vitro transcription. This decisive step accelerated the development of molecular biology applications in several fields. Ideas of using mRNA technologies for vaccine and therapeutic purposes also took off, but roadblocks lay ahead.
- In vitro transcribed mRNA was considered unstable and challenging to deliver, requiring the development of sophisticated carrier lipid systems to encapsulate the mRNA. Moreover, in vitro-produced mRNA gave rise to inflammatory reactions. Enthusiasm for developing the mRNA technology for clinical purposes was, therefore, initially limited.

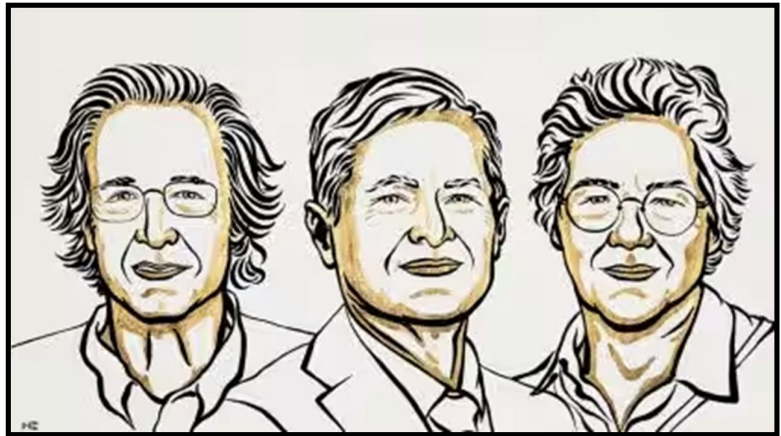




- Katalin Karikó was born in 1955 in Szolnok, Hungary. She received her PhD from Szeged's University in 1982 and performed postdoctoral research at the Hungarian Academy of Sciences in Szeged until 1985. She then conducted postdoctoral research at Temple University, Philadelphia, and the University of Health Science, Bethesda.
- Drew Weissman was born in 1959 in Lexington, Massachusetts, USA. He received his MD, PhD degrees from Boston University in 1987. He did his clinical training at Beth Israel Deaconess Medical Center at Harvard Medical School and postdoctoral research at the National Institutes of Health.
- 113 Nobel Prizes in Physiology or Medicine have been awarded since 1901. It was not awarded on nine occasions: in 1915, 1916, 1917, 1918, 1921, 1925, 1940, 1941 and 1942.

2. Nobel Prize in Physics 2023 awarded to Pierre Agostini, Ferenc Krausz and Anne L'Huillier -

- Pierre Agostini, Ferenc Krausz and Anne L'Huillier "for experimental methods that generate attosecond pulses of light for the study of electron dynamics in matter". This year Nobel Laureates in Physics 2023 are being recognised for their experiments, which have given humanity new tools for exploring the world of electrons inside atoms and molecules. Pierre Agostini, Ferenc Krausz and Anne L'Huillier have demonstrated a way to create extremely short pulses of light that can be used to measure the rapid processes in which electrons move or change energy.
- Fast-moving events flow into each other when perceived by humans, just like a film that consists of still images is perceived as continual movement. If we want to investigate really brief events, we need special technology. In the world of electrons, changes occur in a few tenths of an attosecond, an attosecond is so short that there are as





many in one second as there have been seconds since the birth of the universe.

- An attosecond is an astonishingly short unit of time, equivalent to one quintillionth of a second, or 10^{18} seconds (1 attosecond equals 0.000000000000000001 second).
- Pierre Agostini (The Ohio State University, Columbus, USA) PhD 1968 from Aix-Marseille University, France. Professor at The Ohio State University, Columbus, USA.
- Ferenc Krausz (Max Planck Institute of Quantum Optics, Garching and Ludwig-Maximilians-Universität München, Germany), born 1962 in Mór, Hungary. PhD 1991 from Vienna University of Technology, Austria. Director at Max Planck Institute of Quantum Optics, Garching and Professor at Ludwig-Maximilians-Universität München, Germany.
- Anne L’Huillier (Lund University, Sweden), born 1958 in Paris, France. PhD 1986 from University Pierre and Marie Curie, Paris, France. Professor at Lund University, Sweden.

3. Pakistan’s Inflation Soars to 31.4% -

- Pakistan’s inflation rate surged to 31.4% year-on-year in September, driven by soaring fuel and energy prices. This alarming increase followed a high of 27.4% in August, highlighting the severe economic challenges faced by the nation.
- The International Monetary Fund’s approval of a \$3 billion loan in July prevented a sovereign debt default but imposed stringent conditions. Reforms, such as easing import restrictions and removing subsidies, fueled annual inflation, reaching a record 38.0% in May.

Top 10 Countries with the Lowest Inflation Rates
Here is a list of the countries with the lowest inflation rates in June 2023:

Rank	Country	Inflation rate (%)
1	China	-0.1
2	Switzerland	1.6
3	Saudi Arabia	2.0
4	Spain	2.6
5	Netherlands	3.0
6	Japan	3.2
7	Indonesia	3.27
8	South Korea	3.4
9	United States	3.7
10	Canada	4.0



- To curb inflation, Pakistan increased interest rates to a staggering 22%. The country's currency, the rupee, hit all-time lows in August but rebounded in September, becoming the best-performing currency due to authorities' crackdown on unregulated FX trade.
- The Ministry of Finance anticipates inflation to remain high at 29-31% in the coming months. Despite this, the government recently reduced petrol and diesel prices after consecutive hikes, citing international petroleum prices and an improved exchange rate.
- Analysts, including Tahir Abbas from Arif Habib Limited and Fahad Rauf from Ismail Iqbal Securities, suggest that inflation may have peaked for the fiscal year. They expect a gradual easing, projecting inflation to decrease to around 26-27% in the next few months.



Quiz

Q1. Consider the following statements with reference to Micro Earthquakes:

1. It is a low intensity earthquake with a magnitude of 2.0 or less.
2. They occur only along the coastal boundaries of the continent.

Which of the above statements is/are correct ?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Q2. With reference to Armed Forces (Special Powers) Act (AFSPA), consider the following statements

1. It gives powers to the army, state and central police forces to shoot to kill, search houses and destroy any property that is "likely" to be used by insurgents in areas declared as "disturbed" by the home ministry.
2. It is of a colonial origin.
3. The Disturbed Areas Act (DAA) is the mini version of AFSPA as it confers the same powers to the armed forces to take control of the state in order to curb violence.

How many of the above statements is/are correct ?

- a) Only one
- b) Only two
- c) All three
- d) None

Q3. With reference to Tiger reserves, consider the following statements

1. Project Tiger is a 100% central sponsored scheme.

2. The largest tiger reserve in India is Nagarjunsagar, commonly known as Srisaigram, in Andhra Pradesh.

3. Tiger Census is carried out in every 5 years in India.

4. Guru Ghasi Das tiger reserve is in Madhya Pradesh.

How many of the above statements is/are correct ?

- a) Only one
- b) Only two
- c) Only three
- d) All four

Q4. Santiniketan, recently recognized as a UNESCO World Heritage Site, is located in which Indian state ?

- a) Bihar
- b) West Bengal
- c) Kerala
- d) Rajasthan

Q5. What is India's rank in Global Innovation Index 2023 ?

- a) 40th
- b) 51st
- c) 81st
- d) 82nd

Q6. Which company is going to launch earthquake warning service in India ?

- a) Meta
- b) Microsoft
- c) Google
- d) SpaceX

Answer Key

1	2	3	4	5	6
a	c	b	b	a	c