Current Affairs 28th September 2023 by Saurabh Pandey

India-canada

Addressing families of the victims of the 1985 Air India 'Kanishka' Flight 182 which exploded over the Irish coast after a bomb placed in the luggage went off, for which Khalistani separatist operatives were convicted, Canadian Prime Minister Stephen Harper said he was "sorry" on behalf of the Canadian government.

Prime Minister Manmohan Singh's visit for the G20 summit in Toronto was a chance to reset ties.

No Indian Prime Minister had visited Canada since 1973, and although it was a multilateral summit visit, the bilateral meeting with Mr. Harper saw a number of agreements signed.

However, after the election of Prime Minister Justin Trudeau's Liberal Party, and his dependence on the New Democratic Party led by Jagmeet Singh, has meant that the Trudeau government doesn't share the previous government's avowal of ties with Khalistan separatists.

The Hindu

UNFPA Report

With the decadal growth rate of the elderly population of India estimated at 41% and its share of the total population projected to double to over 20% by 2050, the United Nations Population Fund (UNFPA), India, in its 2023 India Ageing Report, has said that by 2046, it is likely that the elderly population will have surpassed the population of children (aged up to 15) in the country.

More than 40% of the elderly in India are in the poorest wealth quintile, with about 18.7% of them living without an income, the report said, adding that such levels of poverty may affect their quality of life and healthcare utilisation.

Life expectancy of women at 60 is greater than 20 years in States such as Rajasthan, Haryana, Gujarat, Uttarakhand, Kerala, Himachal Pradesh, and the Union Territory of Jammu & Kashmir, raising concerns about their social and economic well being, the report said.

Further, the sex ratio (number of females per 1,000 males) among the elderly has been climbing steadily since 1991, while the ratio in the general population has been stagnating.

Between 2011 and 2021, the ratio increased in India as a whole and across all regions, barring the Union Territories and western India

“Poverty is inherently gendered in old age when older women are more likely to be widowed, living alone, with no income and with fewer assets of their own, and fully dependent on family for support

Safe Harbour Agreement

What is a Safe Harbor Agreement?

A Safe Harbor Agreement (SHA) is a voluntary agreement involving private or other non-federal property owners whose actions contribute to the recovery of species listed as endangered or threatened under the Endangered Species Act (ESA).

The agreement is between cooperating non-federal property owners and the U.S. Fish and Wildlife Service (FWS) or the National Oceanic and Atmospheric Administration, which is responsible for most listed marine and anadromous fish species.

In exchange for actions that contribute to the recovery of listed species on non federal lands, participating property owners receive formal assurances from the FWS that if they ful-fill the conditions of the SHA, the FWS will not require any additional or different management activities by

the participants without their consent.

The Hindu

P-hard problems

P-hard problems called quantum supremacy, will establish quantum computers as superior machines.

Quantum computers use quantum bits, or qubits, whereas classical computers use binary bits (0 and 1). Qubits are fundamentally different from classical bits as they can have the value 0 or 1, as a classical bit can, or a value that's a combination of 0 and 1, called a superposition.

Superposition states allow qubits to carry more information.

This capacity for parallelism gives quantum computers their archetypal advantage over classical computers, allowing them to perform a disproportionately greater number of operations.

Qubits also exhibit entanglement, meaning that two qubits can be intrinsically linked regardless of their physical separation.

#P-hard problems

Quantum circuits are at the heart of quantum computing.These circuits consist of qubits and quantum gates, analogous to the logic gates of classical computers.

For example, an AND gate in a classical setup has output 1 if both its inputs are 0 or 1 – i.e. (0,0) or (1,1).

Similarly, a quantum circuit can have qubits and quantum gates wired to combine input values in a certain way. In such a circuit, a quantum gate could manipulate the qubits to perform specific functions, leading to an output.

These outputs can be combined to solve complex mathematical problems.Classical computers struggle with #Phard problems – a

set of problems that includes estimating the probability that random quantum circuits will yield a certain output.

#Phard problems are a subset of #P problems, which are all counting problems

The #P-complete problems (pronounced "sharp P complete" or "number P complete") form a complexity class in computational complexity theory. The problems in this complexity class are defined by having the following two properties:

The problem is in #P, the class of problems that can be defined as counting the number of accepting paths of a polynomial-time non-deterministic Turing machine.

The problem is #P-hard, meaning that every other problem in #P has a Turing reduction or polynomial-time counting reduction to it.

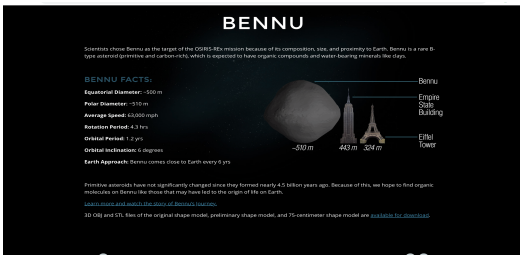
In computational complexity theory, the complexity class #P (pronounced "sharp P" or, sometimes "number P" or "hash P") is the set of the counting problems associated with the decision problems in the set NP.

The Cayley path is like a bridge that helps the travelling salesman move smoothly between two different situations in the study like one random route and one significantly complicated route.

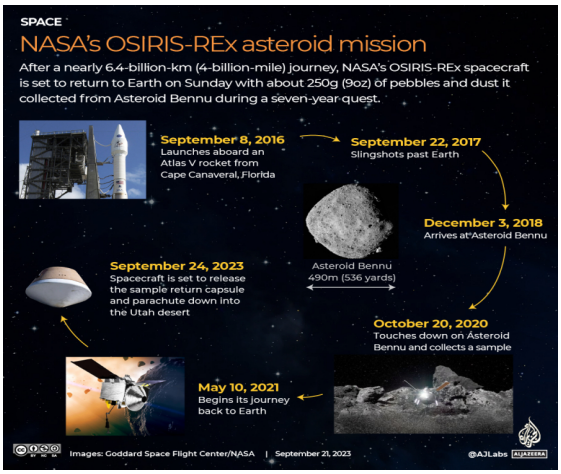
This ‘bridge’ allows us to reframe the most challenging quantum circuit in terms of the average circuit, like seeing how tough it might be to handle the worst traffic jam compared to your regular commute.

The Hindu

Bennu & Hayabusa missions



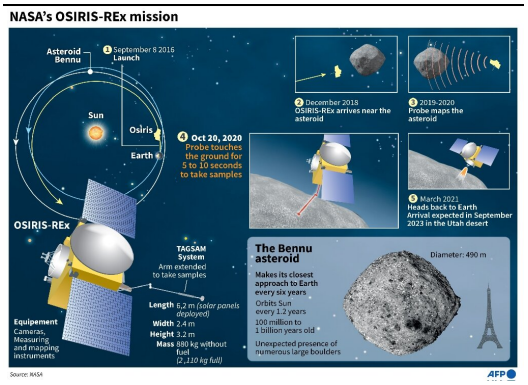
Alongside Japan's two Hayabusa missions, which have collected and returned samples of 25143 Itokawa and 162173 Ryugu, to expand our



knowledge of the solar system's history.

OSIRIS is NASA's third element of its 'New Frontiers' programme, after New Horizons (to explore the Kuiper Belt) and Juno (to study the planet exerting the largest gravitational influence in the solar system).

While studies of Bennu include significant commercial components such as opportunities for space mining and impact mitigation technologies they also participate in a more timeless quest: to find out where life came from and what its fate could be.



The Hindu

Society

Recent research from the Ministry of Statistics and Programme Implementation's Time Use Survey (2019) shows that for 97 minutes spent daily by men on unpaid domestic services for household members, women spend 299 minutes.

Women spend 134 minutes on average daily on unpaid caregiving services for household members as compared to the 76 minutes spent by men.

It is clear that women bear a disproportionate burden of household responsibilities.

This is a result of a patriarchal societal mindset, which will need to change if women are to fully and effectively participate in the labour force, let alone hold the highest elected representative positions.

The Hindu

Mukurthi National park

A total of 10 tigers (six cubs and four adults) have died in the Nilgiris since the middle of August.

In February this year, the forest department arrested four poachers from Rajasthan who had allegedly poached a tiger.

To allay fears that poachers could be targeting tigers, the forest department plans to set up anti-poaching camps in six forest ranges surrounding the Mukurthi National Park

Mukurthi National park

Mukurthi National Park is a 78.46 km² protected area located in the western corner of the Nilgiris Plateau west of Ootacamund hill station in the northwest corner of Tamil Nadu state in the Western

Ghats mountain range of South India.

The park was created to protect its keystone species, the Nilgiri tahr.

The Hindu
