(A Research Based +3 Science College)

C N C B

Academy of Science & Technology

(Recognized by Govt. of Odisha)
(Affiliated to Utkal University)

CNCB Summer School 2024 on

QUANTUM COMPUTATION : A BEGINNING

For passing out students of class XII

VENUE :

CNCB Academy of Science & Technology
Taradapada , Jagatsinghpur-754103, Odisha

https://cncbacademy.com

21th MARCH to 29th MARCH 2024 / 18th APRILto 26th APRIL 2024

WHY QUANTUM COMPUTATION !

We have entered the age of Quantum Computation and Artificial Intelligence(AI) with the advent of Google's Quantum Computer (2019)and ChatGPT(2022). The Google's Quantum computer in 2019 completed a calculation in about 200 secs which would take a classical supercomputer 10,000 years ! Quantum computation combined with AI will produce extraordinary results but if not used with caution it may also bring about the end of humanity as was the fear of Stephen Hawking. Hence it is important for the students to have an early start in these areas to have a comprehensive understanding and compete globally . The objective of the summer school is to introduce the principles of quantum mechanics through quantum computation.

DATES AND SCHEDULE

The students may register for any one of the following slots

- **March 21 - March 29 , 9 AM - 12 PM**
- **April 18 - April 26 , 8:30 AM- 11:30 AM**

ELIGIBILITY AND REGISTRATION

- **Students who are appearing for Class XII exams in 2024 with at least mmmPhysics and Mathematics as subjects are eligible to apply**
- **Register online by visiting https://cncbacademy.com or by sending an email to cncbsc@gmail.com by mentioning " summer school" in the subject field and in the mail your name , school/college and the slot(March or April) you are registering for .**

TOPICS TO BE COVERED

- **Classical Bits vs Qbits**
- **Introduction to Quantum Mechanics using Spin Qbits**
- **Entangled States**
- **Quantum Gates and Quantum Computer**
- **Tutorials**

Pre-requisites

- Knowledge of complex numbers at class XII level
- Knowledge of matrix algebra at class XII level
- Knowledge of vectors at class XII level

INSTRUCTORS

- **Subhendu Panda**
  M.Sc (Vishva-Bharati), Ph.D (SINP, Kolkata)
  HOD Physics , CNCB
- **Devashish Sanyal**
  M.S.(IISc, Bangalore), Ph.D (IACS, Kolkata). Postdoc Fellow (IOP,BBSR)
  Associate Prof, Physics, CNCB

Contact Information

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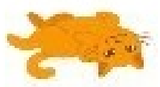
- Phone: 9090386791
- Email: cncbsc@gmail.com

$$|\Psi> = \frac{1}{\sqrt{2}}(|\text{  }> + |\text{  }>)$$

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