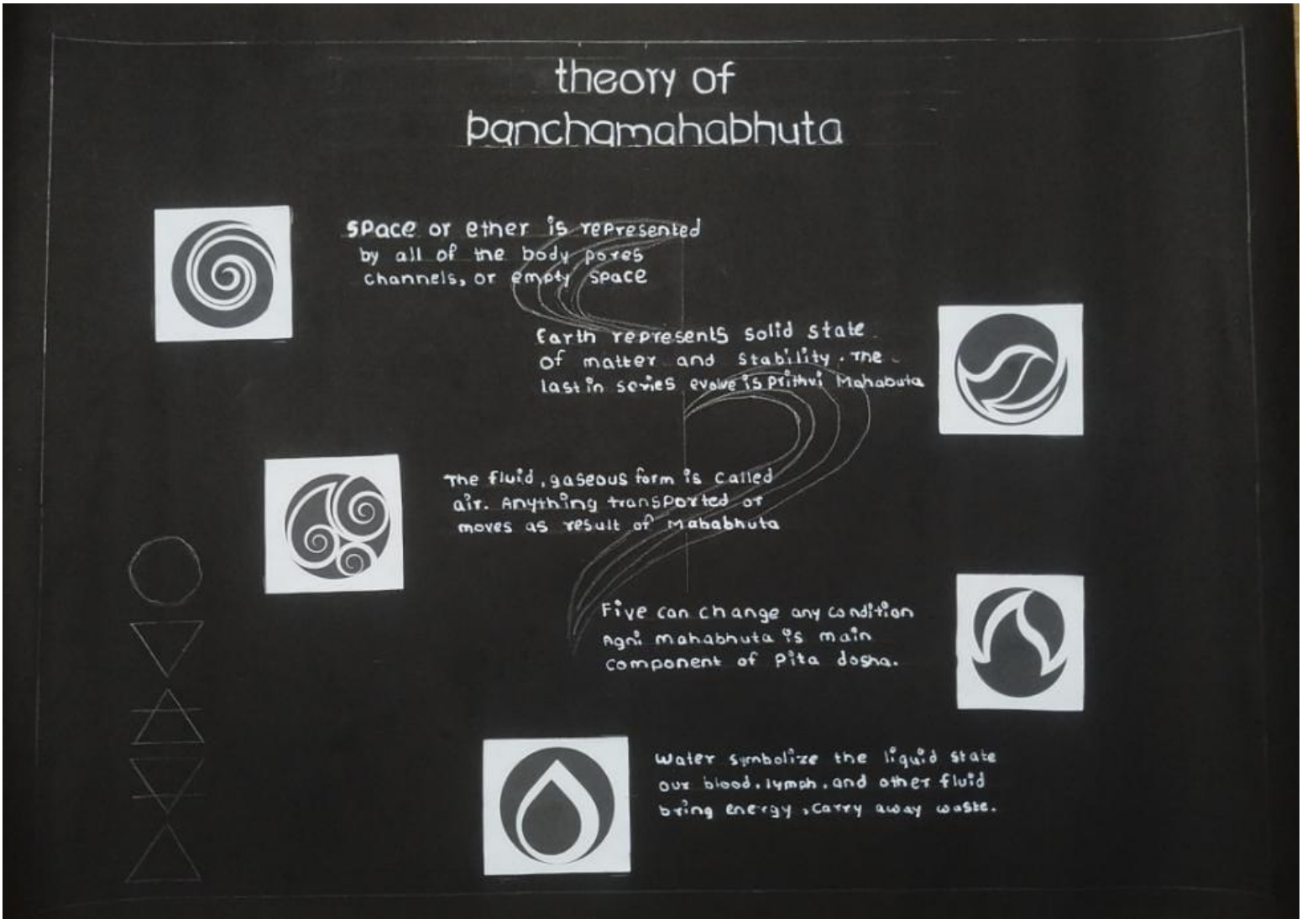
Poster Presentation on

“Ancient Indian scientists & their meaningful contribution to development of science today”



ARYABHATTA BIOGRAPHY

Introduction

The introduction of Aryabhatta to the world happened through his remarkable work in the field of mathematics and astronomy. Aryabhata is one of the most renowned Indian mathematicians, in fact, one of the firsts. Born in the Gupta era that is during the rule of the Gupta Dynasty in 475 CE in Kusumapura Pataliputra, he was known for his extraordinary knowledge in the astronomical field. He has written many treaties in both mathematics and astronomy. He was also the author of many mathematical books which to date is considered holy and reverend immensely. Many of his works were lost, but some are still available for modern scholars and hold great credibility. And his inventions, discoveries and contributions have brought pride to our country. It has also inspired many budding scientists to follow his path and make discoveries.

Who is Aryabhatta ?

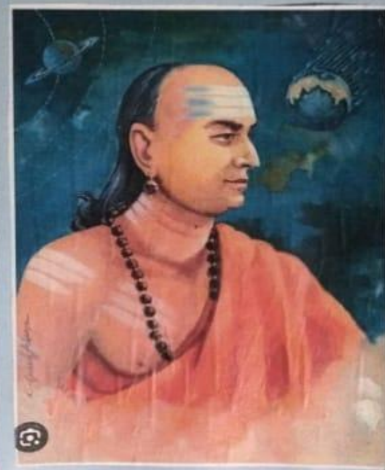
To understand who Aryabhatta is it is important to dig a little deeper beyond the Aryabhata scientist and learn more by finding Aryabhata Information about his inventions and discoveries. There is not enough information about his personal life. Rather, all are curious to know what did Aryabhatta invented ? And therefore Aryabhatta Inventions and Aryabhatta Discoveries is still a topic of interest, as there is a new generation curious to find about this Mathematical genius.

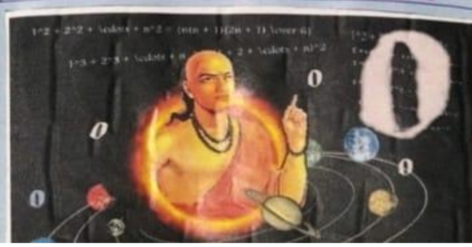
Basic Information

Birth :- 476 CE
Birth Place :- Kusumapura, Capital Patalipitra in the Gupta
Present Day :- birthplace is known to be Bihar, Patna, India.
Works :- His Most Notable work is Aryabhatiya & Arya
Death :- 550 CE

Aryabhata's works and Legacy

The legacy of Aryabhata is truly unmatched, and no one can replicate his major achievements at a world-class level that is relevant to this day ...





Death of Aryabhata scientist

Aryabhata died a successful mathematician, astronomer and scientist at the age of 74. The place and time of death are still unknown. It was believed he spent most of his life in Kusumapure, pataliputra.

Aryabhata's Legacy

Indian astronomical traditions and other cultures were highly influenced by Aryabhata's work. His works, experiments and calculations were translated into several languages to help other astronomers. During the Islamic Golden Age the Arabian translation was specifically influential. Some of his results were cited by great Arabian mathematicians such as Al-Biruni and Al-khawarizmi who believed that the Earth rotates on its axis.

Aryabhata's definitions for cosine, sine, inverse sine, verse sine gave birth to Trigonometry. He was one of the first mathematicians to determine sine and versine (1-cosx) tables from 0 to 90 degrees in the interval of 3.75 degrees to an accuracy of 4 decimal places.

The modern names of Trigonmetric functions, sine and cosine are derived from the Sanskrit words "jya" and "kojya" which were introduced by him.

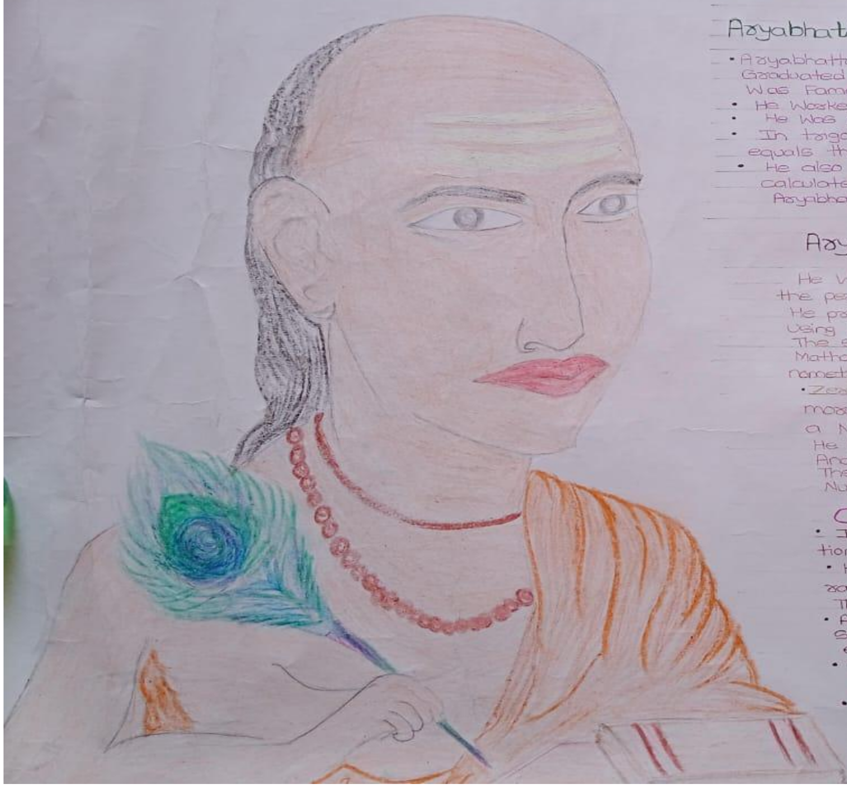
His astronomical calculation techniques were also very popular among different astronomers. They were widely used to form Arabic astronomical tables "Zijes".

Conclusion

The contributions of a scientist since Aryabhata has never been the same. He truly made the world notice India, in terms of holding scientific knowledge and value that made a difference to the world. He challenged and contradicted many beliefs that were going on at the time and through calculations provided pieces of evidence for it to be true. And after all these years, his work does not flinch from meticulous accuracy. There are very few scientists who achieved in their lifetime an extraordinary duty of work and Aryabhata was one of them.

...pali Kaushant Borchate class- B.SC-I Roll No - 3 sub- IKS (Physics) PRN No.- 2023000110

Aryabhatt Siddhant



Introduction

Aryabhata Was born in 476 CE in Kusumapura at pataliputra. He Was the First of the major Mathamatician - Astronomers From the Classical age of Indian Mathamatics and Indian Astronomy. His Works include the Aryabhatiya (Which Mention that in 3600 Kali Yuga, 499 CE, he Was 23 years old). And the Aryatta Siddhant This article Will explain to you about the Aryabhatta (5th century) Which will be helpful in Ancient History preparation For the UPSC civil service Exam.

Aryabhatta (5th century) —

- Aryabhatta, Who Was born in Kerala and lived From 476 AD to 550 AD Graduated From the Ancient University of Nalanda. Aryabhatta Was Famous Mathamatician during the Gupta period.
- He Worked on a pi estimate of 3.1416
- He Was also a broken Mathamatacian Who broke a new Ground
- In trigonometry, he discovered that the area of a triangle equals the product of a perpendiculars and the half-side
- He also observed the movements of the solar system And calculated that the Solar years lasts 365.8586805 days. Aryabhatta stayed in Kusumpur, pataliputra.

Aryabhatta — Facts

He Wrote Aryabhattiya, a compendium of mathamatics at the period. It is divided into Four pieces.
He presents the approach of indicating large decimal Values using alphabets in the First part.
The Second half contains challenging problems From current Mathamatics areas such as number theory, Geometry, trigonometry and Algebra.

- Zero And Aryabhatta — He demonstrated that zero was more than simply a number; it was both a symbol and a Notation.

He calculated the precise distance between the Earth And the Moon.
The discovery of zero introduced New dimension to Negative Numbers.

Contribution To Astronomy —

- In Several sources, he appears to Relate the apparent motions of the sky to the Rotation of the Earth.
- He could have imagined the planet's orbits Were elliptic rather than circular.
This is alluded to in the First chapter of Aryabhattiya.
- According to Aryabhatta's Geocentric conception of the solar system, the Sun and Moon are each carried by epicycles.
- Solar and Lunar eclipses Were Scientifically described Aryabhatta.
- Aryabhatta explored the Actual cause of Solar eclipse the surya Siddhanta.
Reflecting Sunlight, he claims, illuminates the Moon and planets.

NILKANTHA SOMAYAJI

About :-

Born : Kaytha, 14 June 1444
Died : 587 Ujjain
Parents: Aditya dasa
Siblings: Bhadrabhau
Noteble Works: Pancha- Siddhantika, Brhat- samhita, Brihajjataka

Early life :-

Nilkantha was born into Brahmin family which came from South Malabar in kerela.

Polymath:-

Nilkantha Writing Substantiate his knowledge of several branches of Indian philosophy and culture. It is said that he could refer to a mimamsa authority to establish his view- point in a debate and with equal felicity apply a grammatical dictum to the same purpose. In his writings he refers to a Mimamsa authority quotes extensively from Pingala's chdas- sutra Scripture Dharmasastras Bhagvata And Vishnupurana also Sundararaja a contemporary Tamil astronomer refers to Nilkantha as Sad- darshani - parangata, one who had mastered the six Systems of Indian philosophy

Information :- One of the most famous schools of Mathematics astronomy in India was the kerala School of maths and astronomy, founded by Madhava of Sangamagrama during the 14th Century, who made pioneering Studies in infinite series, calculus, trignometry, geometry and algebra He was born around 1350 near to Aloor, a panchyat in kerala's Thrissur district. He was the first use infinite series approximation for a range of trigonometric function, which has often been regarded as a significant step to move from the finite step of ancient mathematics towards an infinite limit.
Most of the mathematical discoveries of the kerala school, came from an effort to Solve astronomy problems. Their most important results, related to series expansion for trignometry was recorded in a book called Tantrasangraha. They also provided what is now considered the first example of a power series, especially for several infinite series expansions, including $\sin\theta$ and $\arctan\theta$, two centuries before Europe invented calculus.

Name - Sanket Abhijeet Patil
PRN no. - 2023000158
Std - Bsc I
Sub - IKS

Works :- 1. Tantrasamgraha

2. Golasara: Description of basic astronomical element and Procedures.

3. Sidhhantadarpana: A short work in 32 slokas enunciatin astronomical constant with reference to the kalpa and Specifying his views on astronomical concepts and topics

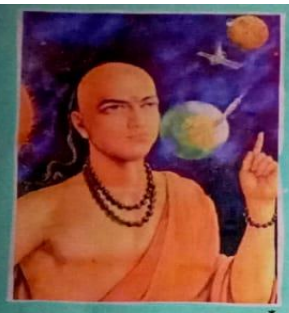
4. Candrachayaganita: A work in 32 verses on the methods for the calculation of the time from the measurement of the shadow of the gnomon cast by the moon and vice versa.

5. Aryabhatiya - bhashya: Elaborate commentary on Aryabha

6. Sidhhantadarpana - vyakhya: Commentary on his own Siddhantadarapana.

7. Chandrachhayaganita - Vyakhya: Commentary on his own chandrachhayaganita.

Aryabhatt Siddhant



Basic Information :-

Birth :- 487 CE
Birth place :- Kusumapura, capital Pataliputra in modern-day Patna
Present Day :- Birthplace is known to be Bihar, Patna, India
Works :- His Most Notable work is Aryabhatiya & Arya
Death :- 550 CE

Introuctin :-

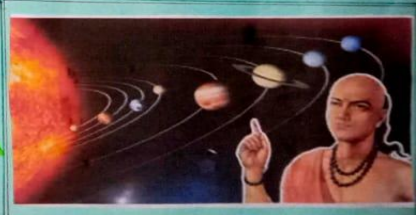
The introuctin of Arybhatta to the word happenal through his remarkable work in the field of Mathematics and astronomy. Arybhatta is one of the most renowned Indian Mathematics, in fact, the rule of the Gupta Dynasty in 475 CE in Kusumapura-pataliputra, he was known for his extraordinary knowlege in the astronomical field. Many of his works were lost, but some are still availble for Modern scholars and hold great credibility. It has also inspired many Guiding scientist to follow his path and make discoveries.

Aryabhata's Legacy :-

Indian astronomical tradition and other cultures were highly influenced by Aryabhatas work. His works, experiments and calculations were translated into several languages to help other astronomers. During the Islamic Golden Age, the Arabian translation was specifically influential. Aryabhatas definitions for cosine, inversesine, versesine gave birth to trignomaters. He was one of the first Mathematicians to determine sine and versine (1- cos x) tables from 0 to 90 degrees in the interval of 3.75 degrees for an accuracy of 4 decimal places. His astronomical calculation techniques were also very popular among different astronomers. They were widly used to form Arabic astronomical tables "Zijes". Cosine are derived from the sanskrit words "ujya" and "kojya" which were introduced by him.

Conclusion :-

The contribution of a science Aryabhata has never seen the same. He truly made the world notice India, in terms of holding scientific knowledge challenged Contradicted many beliefs that were going on at the time and through Calculations provided pieces of evidence for it to be true. And after all these years, his work does not stray from meticulous accuracy. There are very few scientists who achieve in their lifetime an extraordinary duty of work and Aryabhata was one of them.



Name :- Harshad Vikas More
Subject :- Iks
Roll No :- 40
class :- Bsc I
PRN No. :- 2023000558

THEORY OF PANCHBOOTA

Theory Of Panchmahabhuta

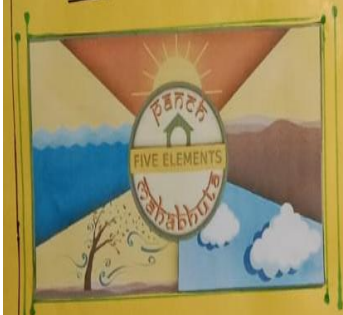
air

- The fluid gaseous form is called air. Anything transported or moves as result of Mahabhuta.

water

- Water symbolize the liquid state our blood, lymph and other fluid bring energy, ~~carry~~ carry away waste.

Panchmahabhuta theory
The doctrine of panch mahabhuta - bhuta is one of the philsophy. In Ayurveda also the applied According to which every matter whether it is living or non living is composed of these five elements Akasha, Vayu, Tej, Jala & Prithvi



fire

- Fire can change any condition. Agni Mahabhuta is main component of Pita dosha.

Importance
Knowledge of five elements allows the yogi to understand the laws of nature and to use yoga to attain greater health, power, wisdom and happiness.

earth

- Earth represents solid state of Matter and Stability. The last in series evolve is Prithvi Mahabhuta

ether

- Space or ether is represented by all of the body pores channels, or empty space.