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Bose Institute

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Bose Institute

Practice MCQs

At a glance

This lesson follows the research centre that Jagadish Chandra Bose gave to the nation.

01 **1917** Bose opened the Institute on his birthday.
02 **1920** He built the Darjeeling campus in the hills.
03 **1971** The Institute became an autonomous body of DST.
04 **2017** The Unified Academic Campus opened at Salt Lake.

- It has seven campuses across West Bengal.
- Its scientists made the first recording of mu-meson tracks.
- Kaustuv Sanyal leads it today.

Source: Bose Institute, History.

Source: Bose Institute, Introduction.

DSTThe Department of Science and Technology.
AutonomousRuns its own affairs.
Cosmic rays Fast particles that reach Earth from space.
Mu-mesonA short-lived particle made by cosmic rays.
On his birthday in 1917, J.C. Bose gave his life's work to the nation. He called his new institute a temple. This lesson follows how it began, what it found, and how it runs today.

Contents

1. How it began
2. What it does
3. How it is run
4. Visitors and honours
5. How exams test it
6. 4 questions to think through
7. 7 understanding checks
8. Related topics
9. Practice MCQs

Who founded the Bose Institute, and why?

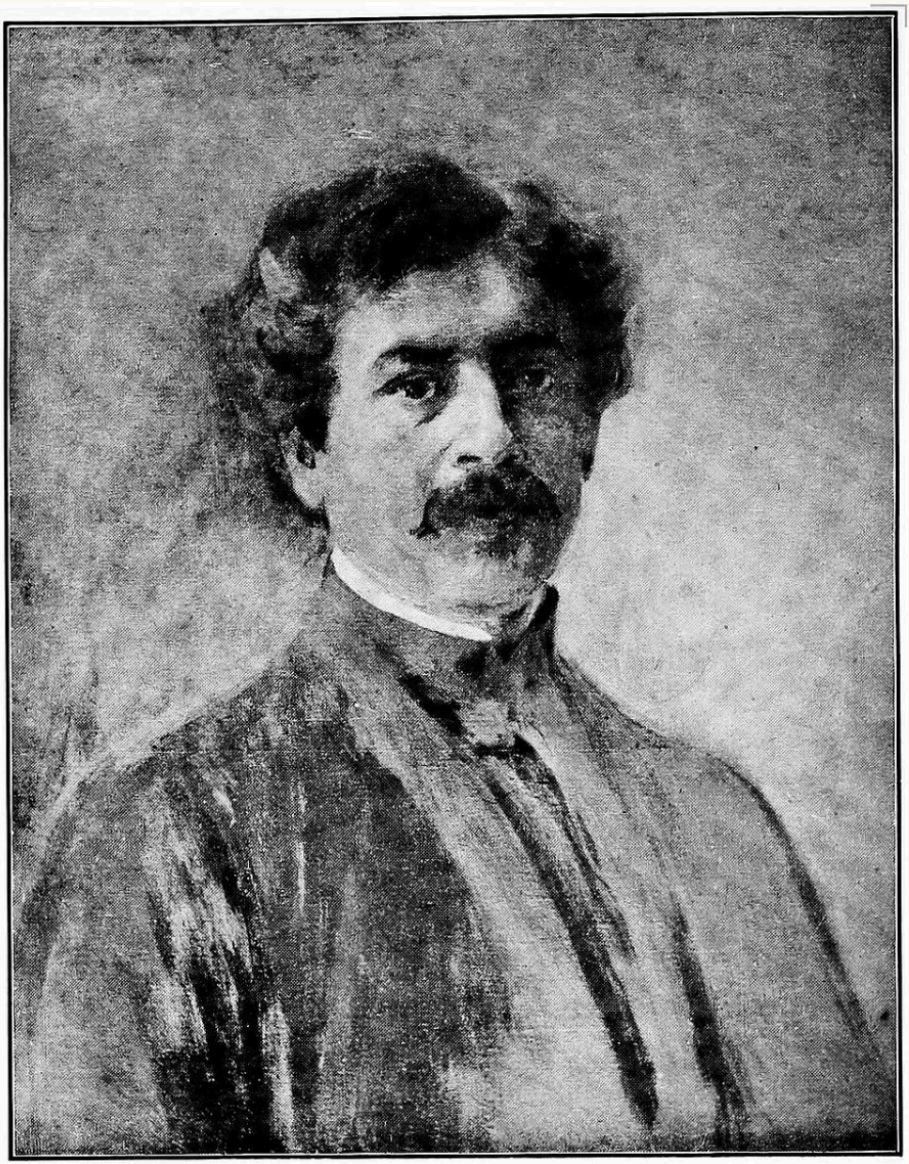
J.C. Bose founded the Bose Institute in Calcutta in 1917. He wanted a place where many sciences could work together. The institute still stands as one of India's oldest research centres.

1. When and how did Bose open the Institute?

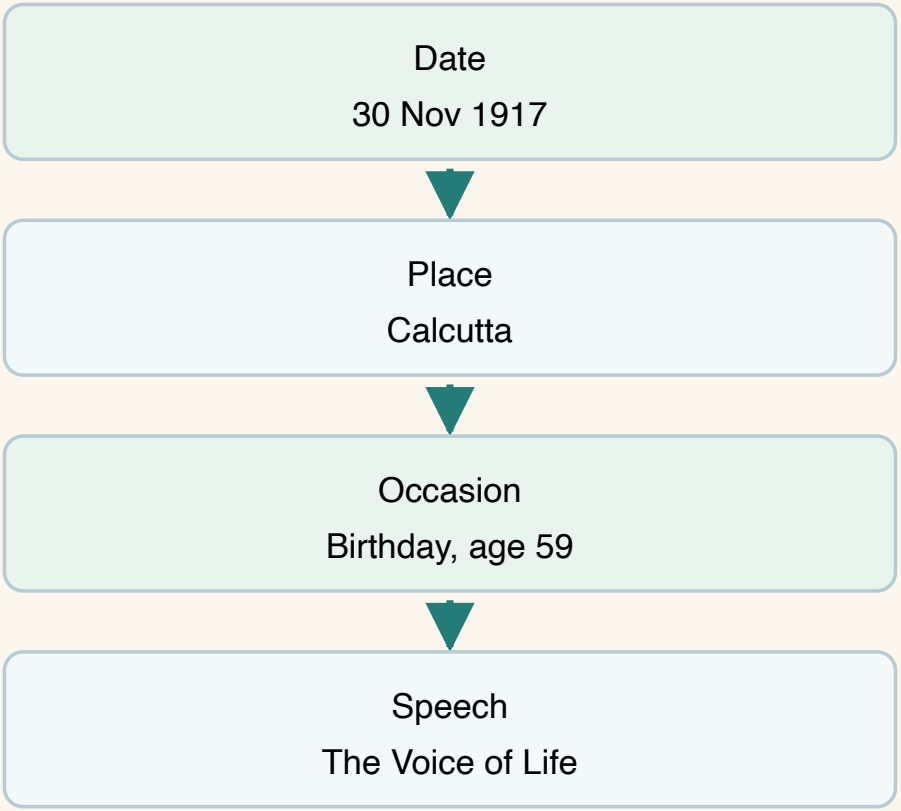
Bose opened the Bose Institute on 30 November 1917. That was his birthday, born 30 November 1858, so he turned 59. He dedicated it to the nation in a speech called "The Voice of Life".

He said it was “not merely a laboratory but a temple”. Its aims were to advance science and to spread knowledge.

The Institute began at the Main Campus in Rajabazar, in central Kolkata.



Jagadish Chandra Bose in 1907. Public domain, via Wikimedia Commons (Patrick Geddes, 1920). File page.



Bose opened the Institute on his birthday.

True or False: Bose opened the Bose Institute on his birthday, 30 November 1917.
Source: Bose Institute, History, item 1

Source: Bose Institute, Founder, item 1

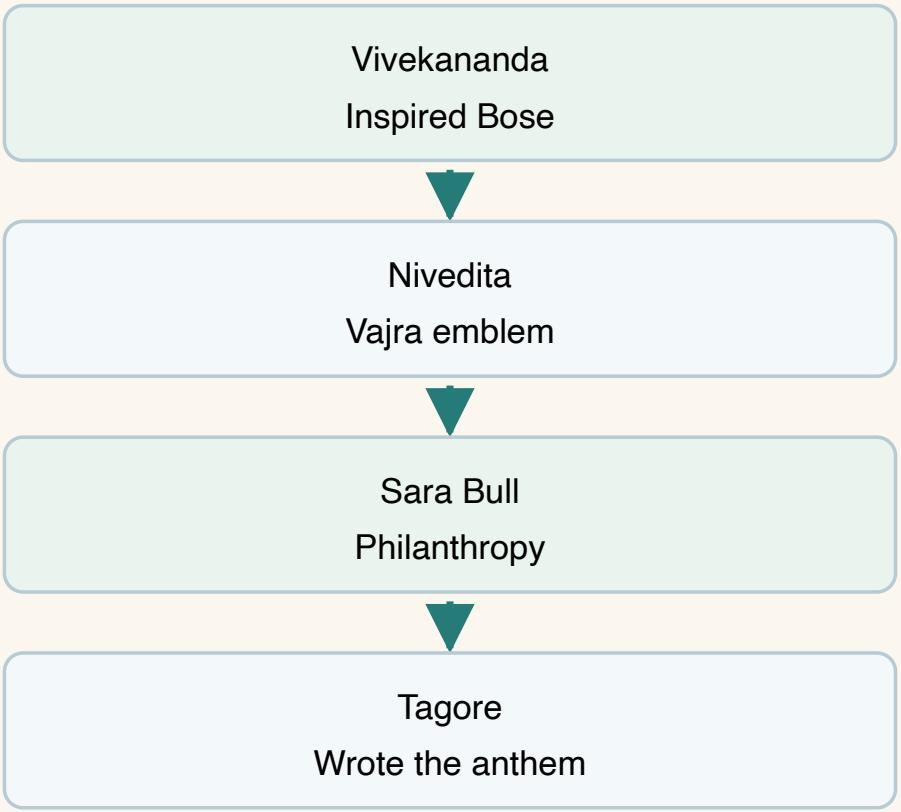
Source: Bose Institute, Introduction, item 1

Source: Banglapedia, Bose biography, item 1

2. Who inspired and helped him?

Swami Vivekananda, Sister Nivedita, Sara Chapman Bull and Rabindranath Tagore supported Bose. Sara Chapman Bull was an American philanthropist. Her generous gifts were important in setting up the Institute.

Nivedita's influence shows in the Institute's emblem, the vajra. Tagore was then visiting the USA. He wrote the song "Matri mondiro punya angono" for the day. It is now the Institute's anthem.



Four people supported Bose.

Source: Bose Institute, History, item 2

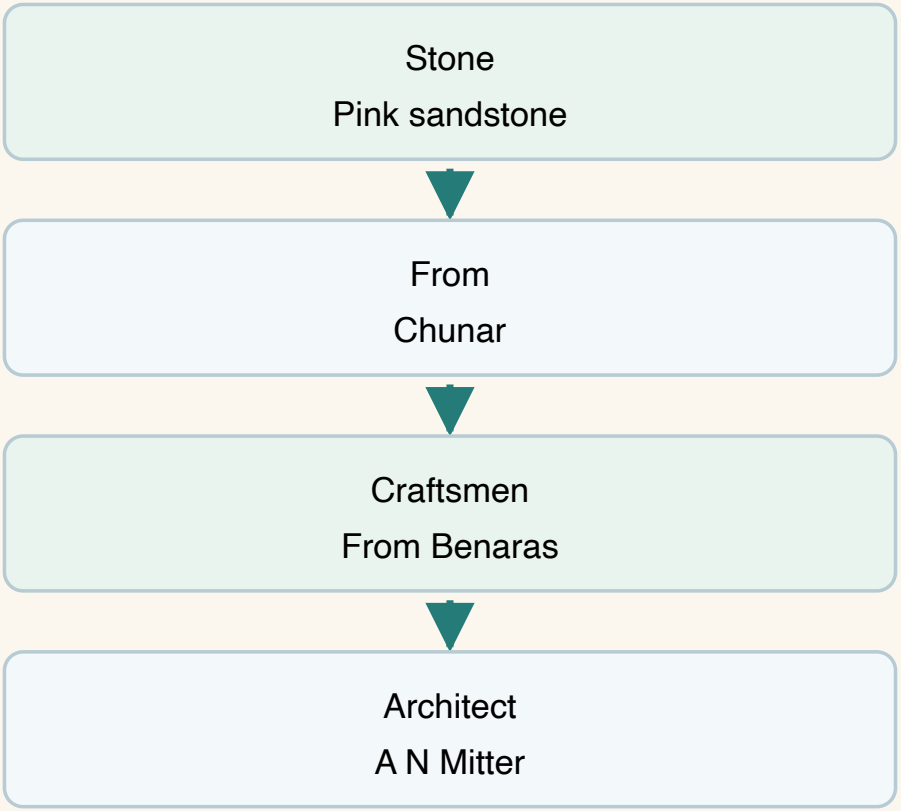
3. What is special about the building?

Bose wanted the building to be one of the finest in the city. The pink sandstone was brought from Chunar. The stone craftsmen came from Benaras. A young architect, A.N. Mitter, built it.

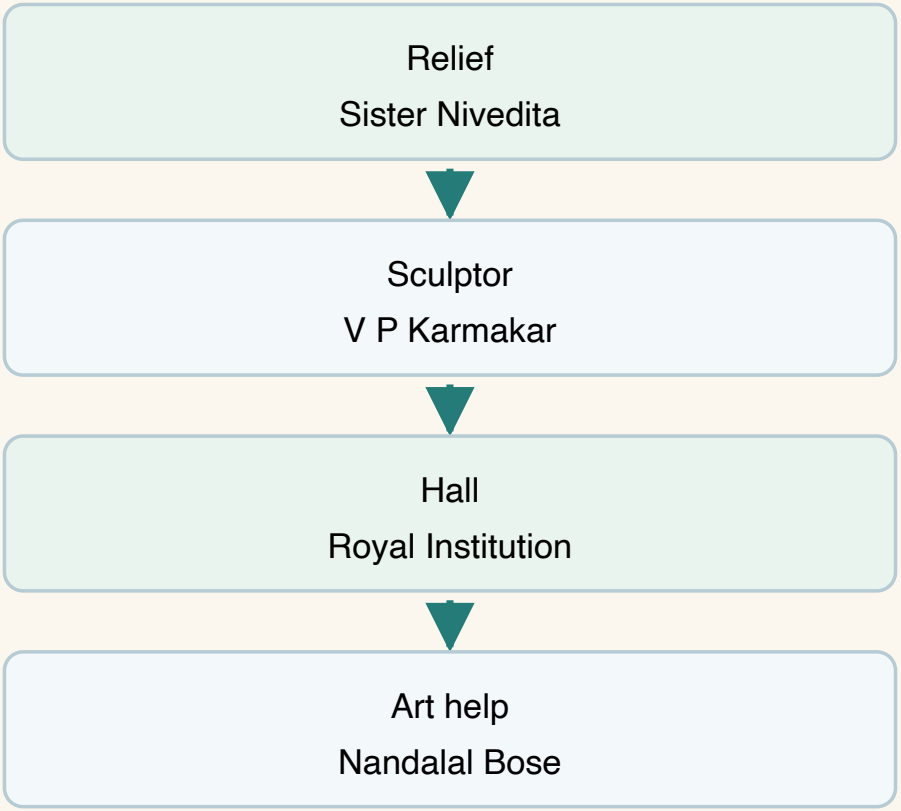
The artists Abanindranath Tagore and Nandalal Bose helped with the art. At the entrance is a marble relief of Sister Nivedita, made by the sculptor Vinayak Pandurang Karmakar. The lecture hall was modelled on the Royal Institution in London, where Bose had lectured many times.



The Bose Institute in Kolkata. Photo: Anupamdutta73, via Wikimedia Commons. File page. Licence: CC BY-SA 4.0.



The stone came from Chunar.



The lecture hall copied London's Royal Institution.

True or False: The lecture hall of the Institute was modelled on the Royal Institution in London.
Source: Bose Institute, History, item 3

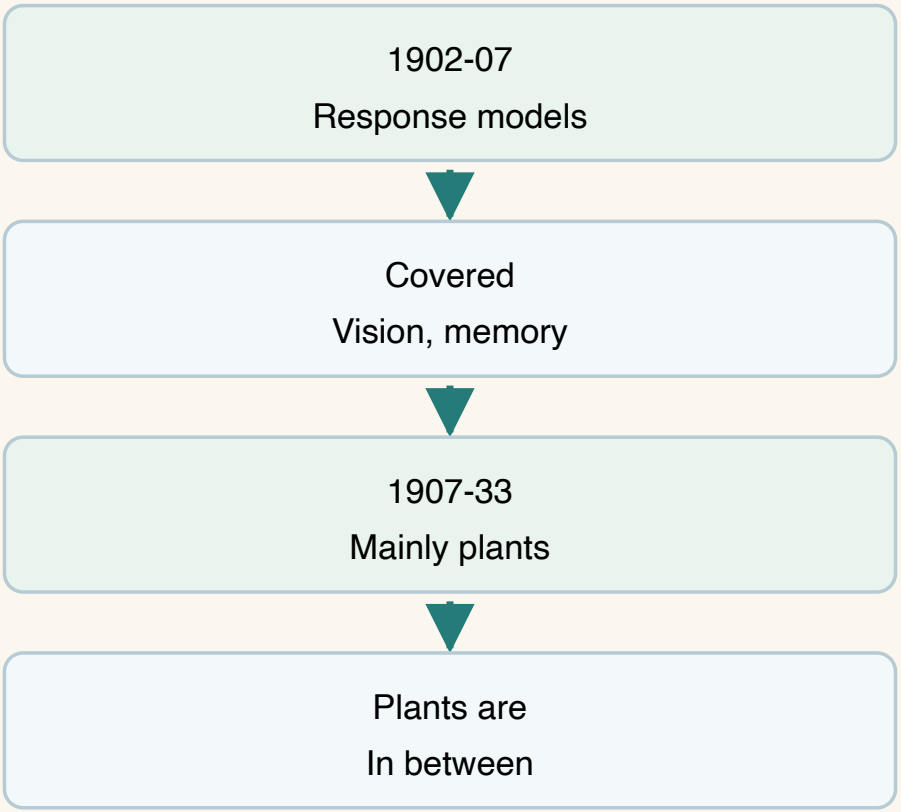
What work was done at the Institute?

Bose carried on his own studies there. Later scientists added new fields. Some of their results were world firsts.

4. What did Bose study at the Institute?

From 1902 to 1907 Bose built models of how living things respond to a push. The models explained how excitation travels through plant and animal tissue. They also covered vision and memory.

From 1907 to 1933 he mostly studied plants. Their responses lie between those of non-living matter and animals.



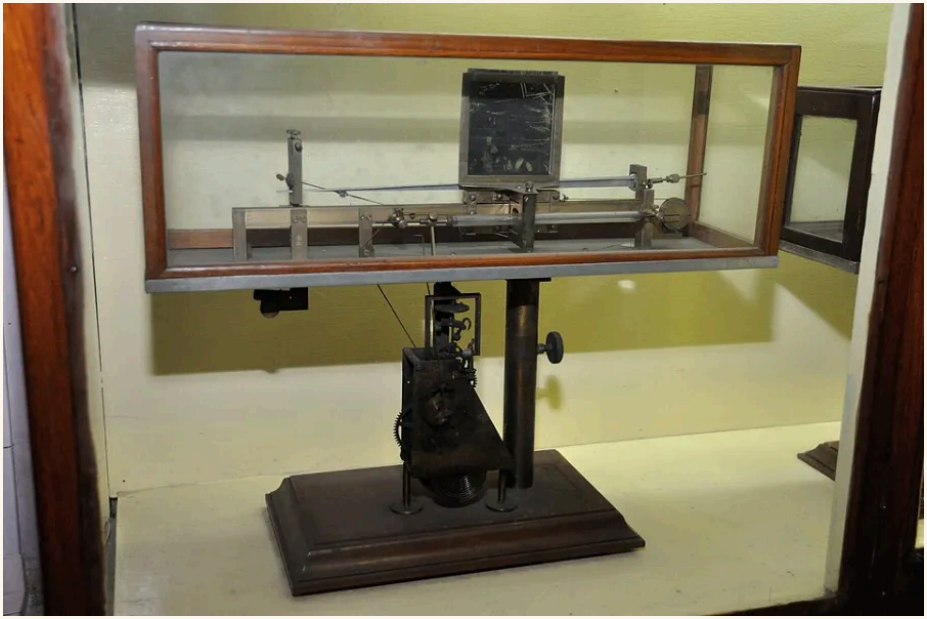
From 1907 he turned mainly to plants.

Source: Bose Institute, Founder, item 4

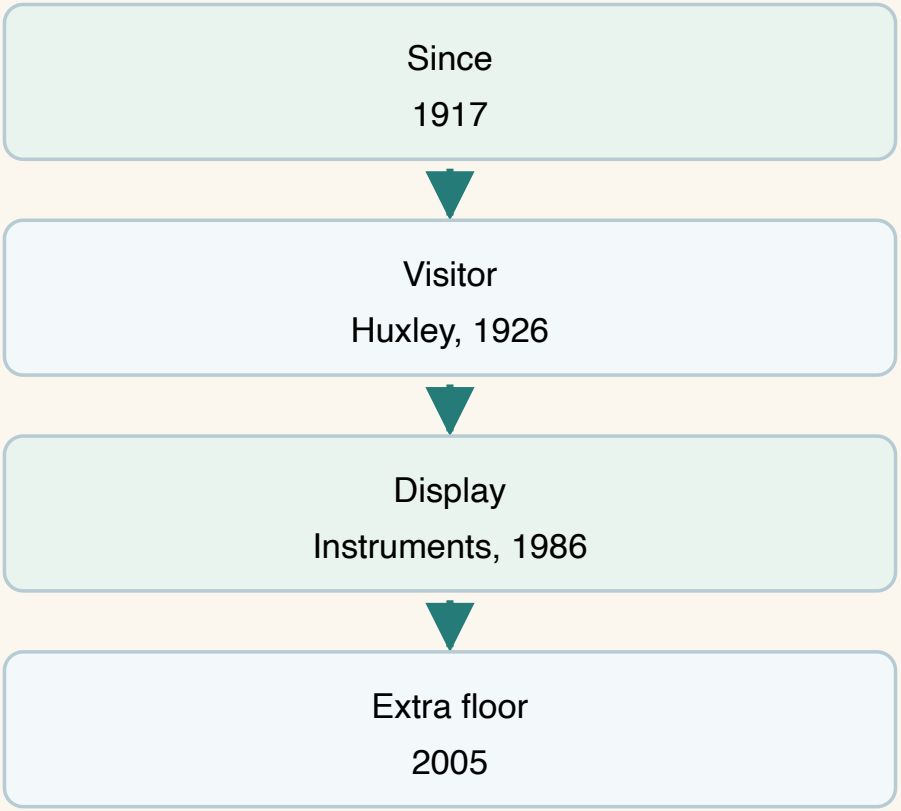
5. What did visitors see in the museum?

The J.C. Bose museum has been part of the Institute since 1917. Its wide entrance hall was used to show Bose's discoveries, often with a live demonstration by Bose himself.

The writer Aldous Huxley visited in 1926. He noted that all the experiments were running at full blast. Many original instruments were put on display in 1986-87. A floor was added in 2005.



A crescograph at the Jagadish Chandra Bose Museum, Bose Institute, Kolkata. Photo: Biswarup Ganguly, via Wikimedia Commons. File page. Licence: CC BY 3.0.



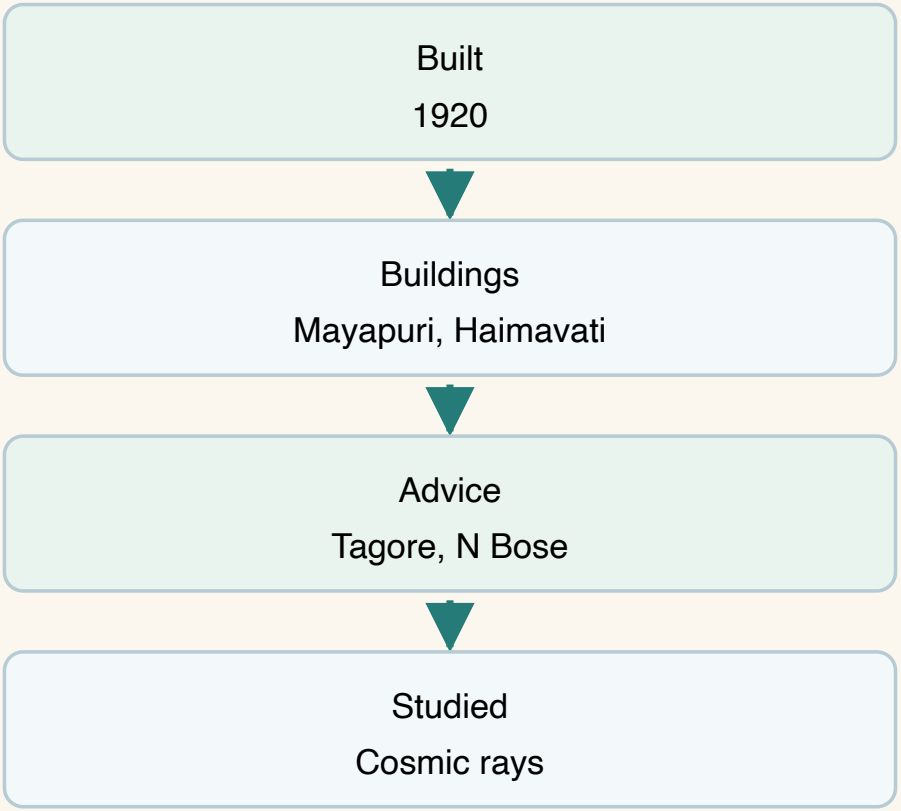
The museum is as old as the Institute.

True or False: The Bose Institute museum was opened only in the 1980s.
Source: Bose Institute, Museum, item 5

6. Why does the Darjeeling campus matter?

Bose built the Mayapuri and Haimavati buildings in Darjeeling in 1920. He took advice from Tagore and Nandalal Bose. Many basic experiments by Bose and his students were done here.

D.M. Bose and Biva Choudhury ran their cosmic ray experiment here. Today the campus hosts a national facility for astroparticle physics and space science. Cosmic rays are fast particles that reach Earth from space.



Bose built it in 1920.

Then	Today
D M Bose, Choudhury	National facility
Cosmic ray tests	Astroparticle, space science

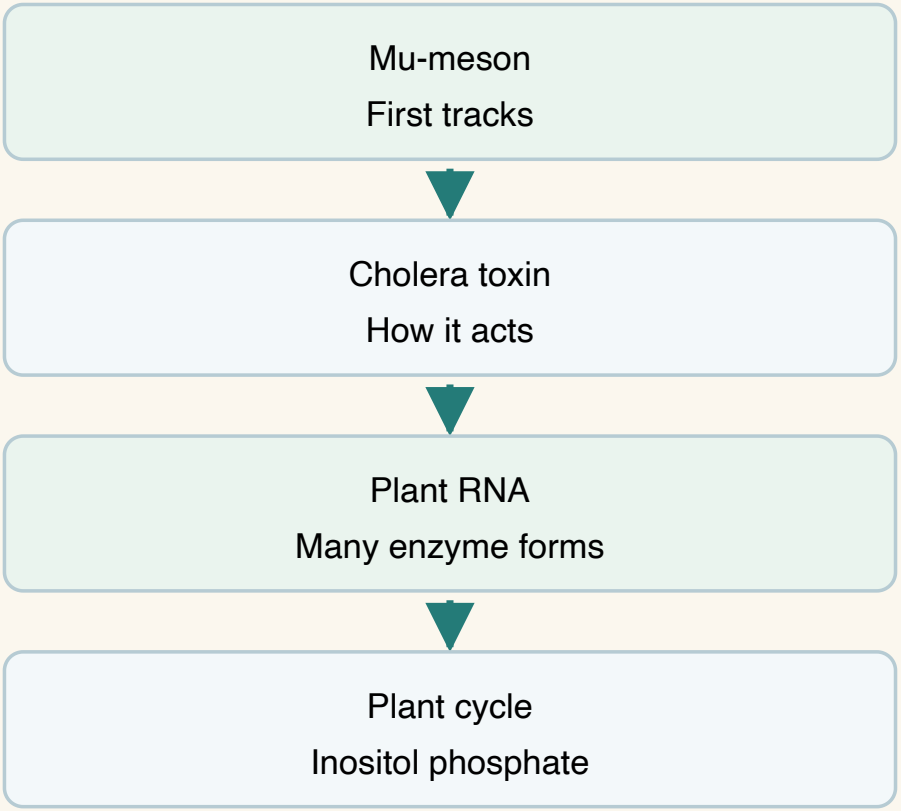
The hills now host a national facility.

Source: Bose Institute, Darjeeling Campus, item 6

7. What did Institute scientists discover?

Debendra Mohan Bose and his co-workers made the first recording of mu-meson tracks. A mu-meson is a short-lived particle made by cosmic rays.

Shambu Nath De found how cholera toxin works. Joshua Lederberg nominated him for the Nobel Prize. B.B. Biswas and his group showed that plants have many forms of the enzyme RNA polymerase. They also found the inositol phosphate cycle in plants.



Several results were world firsts.

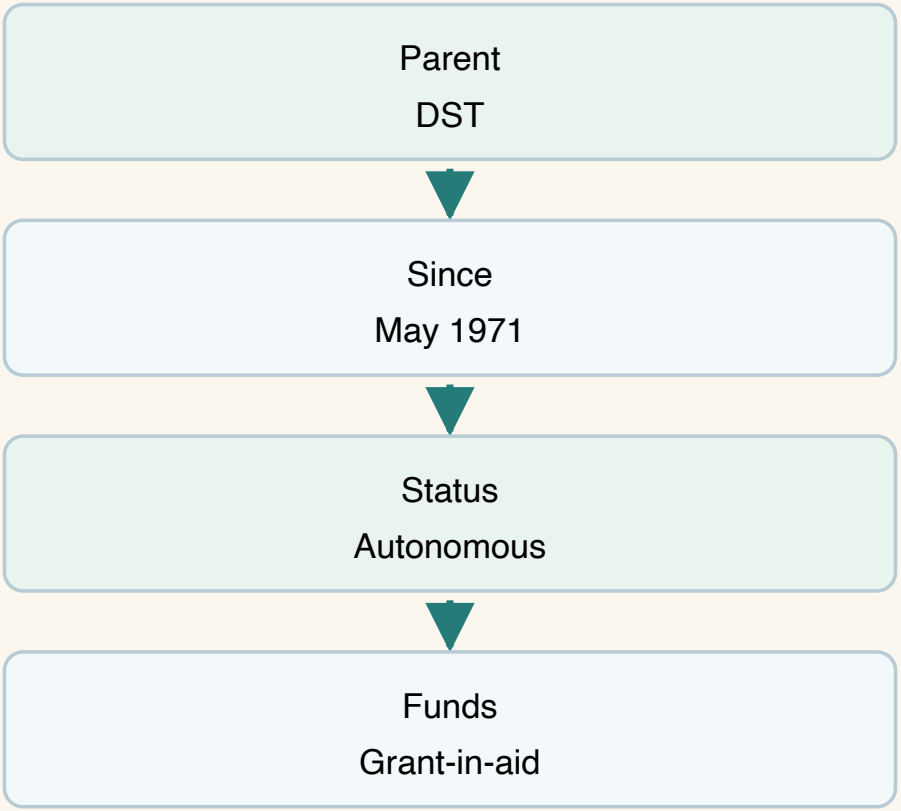
True or False: Shambu Nath De found how the cholera toxin works.
Source: Bose Institute, History, item 7

How is the Institute run today?

The Institute now works under the Department of Science and Technology (DST). It has grown from one building into several campuses.

8. Who pays for and runs it?

The DST was set up in May 1971. Since then the Bose Institute has been an autonomous grant-in-aid institution of DST. Autonomous means it runs its own affairs. Grant-in-aid means the government funds it.



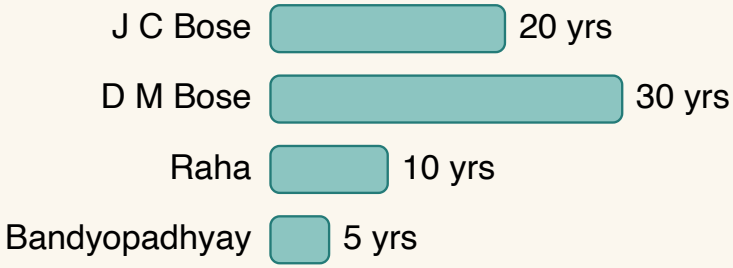
DST funds the Institute but it runs itself.

Source: Bose Institute, History, item 8

Source: Bose Institute, Introduction, item 8

9. Who has led it?

Bose himself was Director from 1917 to 1937. Debendra Mohan Bose led it for thirty years, from 1937 to 1967. Later directors include Sibaji Raha (2006 to 2016) and Uday Bandyopadhyay (2019 to 2024). Prof. Kaustuv Sanyal is the present Director.



D M Bose served the longest.

True or False: Satyendra Nath Bose was the Director of the Bose Institute from 1937 to 1967.
Source: Bose Institute, Past Directors, item 9

Source: Bose Institute, Director, item 9

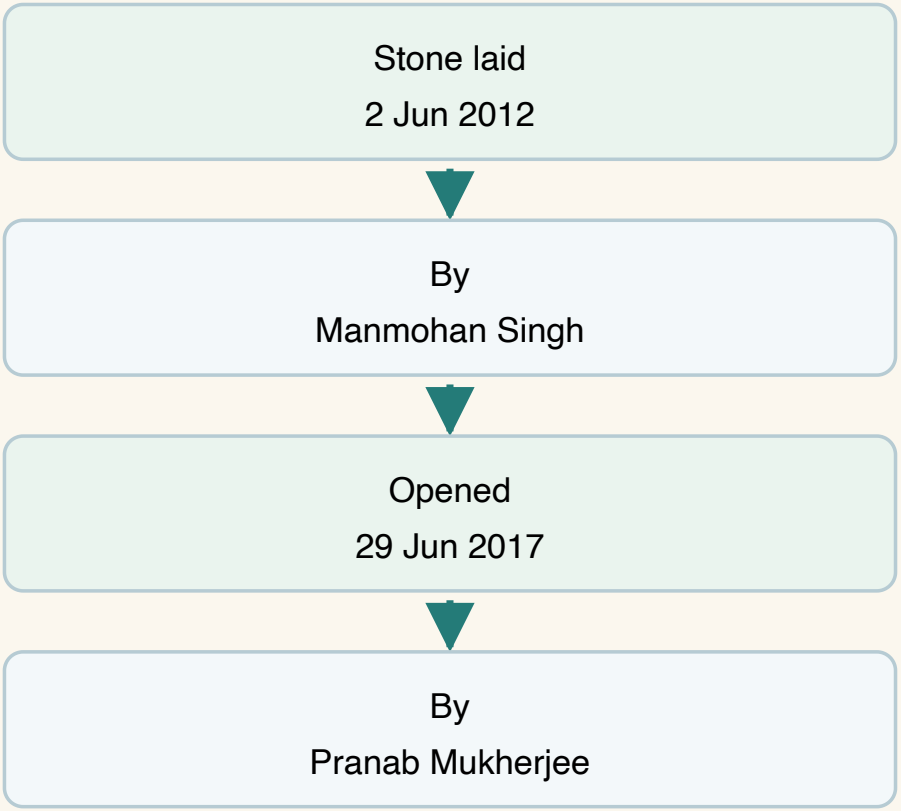
10. Where are its campuses?

The Institute now has seven campuses across West Bengal. The Main Campus is in Rajabazar. Its primary working campus is the Unified Academic Campus at Sector V, Bidhannagar, in East Kolkata.

Prime Minister Manmohan Singh laid its foundation stone on 2 June 2012. President Pranab Mukherjee inaugurated it on 29 June 2017. It brought scientists from several older sites together.



The Bose Institute campus in Kolkata. Photographer: Biswarup Ganguly, via Wikimedia Commons. File page. Licence: CC BY-SA 3.0.



One man laid the stone and another opened it.

True or False: President Pranab Mukherjee laid the foundation stone of the Unified Academic Campus in 2012.
Source: Bose Institute, Introduction, item 10

Source: Bose Institute, Unified Academic Campus inauguration, item 10

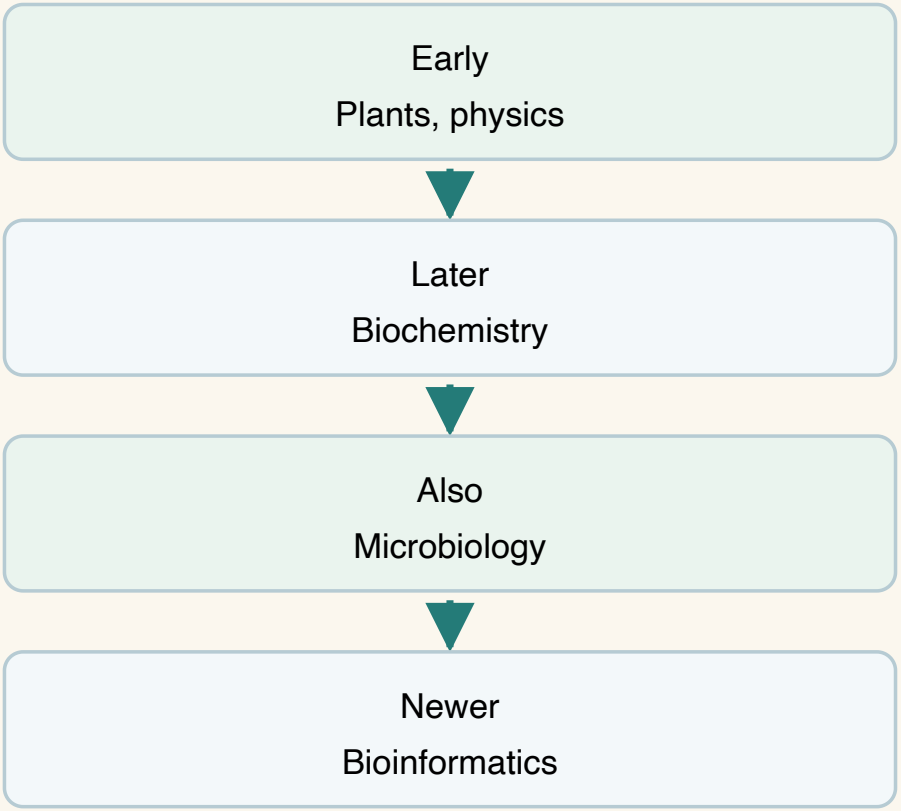
Source: President's speech at the Unified Campus, 2017, item 10

11. What does it research now?

Early work was in plant physiology, physics, chemistry and biophysics. Over recent decades the Institute added biochemistry and structural biology. It also added plant sciences, molecular and cell biology, microbiology and environmental science.

Biotechnology and bioinformatics came next. Its stress is on both basic and applied research.

Research is still active today. On 6 August 2026 its scientists shared a new way to build quantum networks. It was published in a physics journal. It is called General Concurrence Percolation. It aims to make such networks easier to build.



The Institute added new fields over time.

Source: Bose Institute, Introduction, item 11

Source: DD India, quantum network protocol, item 11

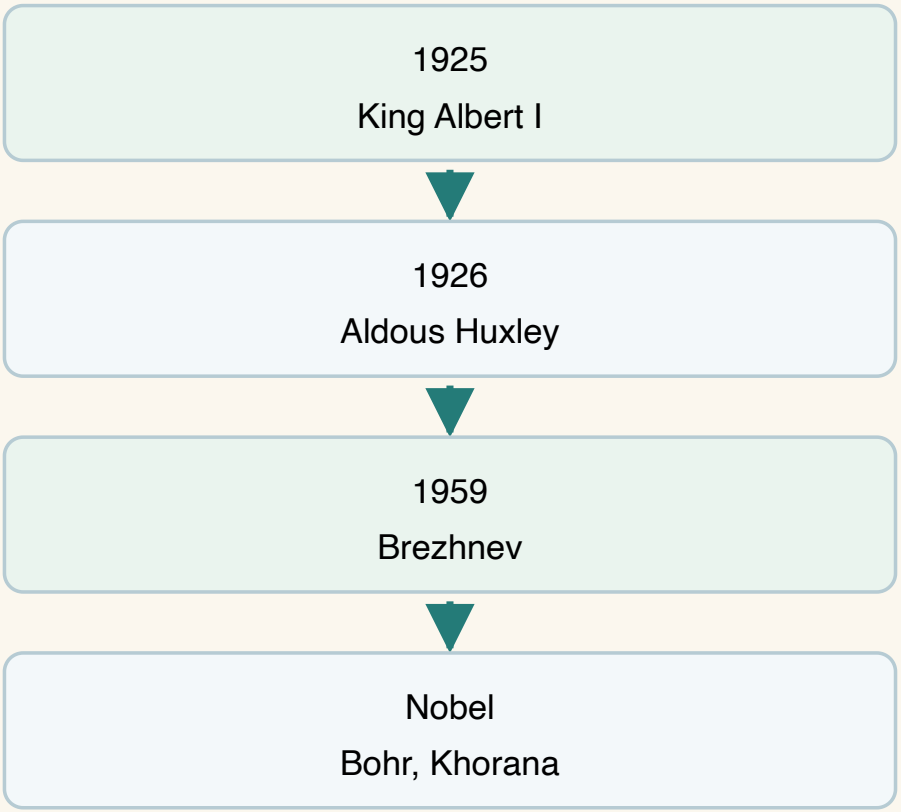
Who has visited and honoured it?

The Institute drew great minds from the start. Its own scientists later won national prizes.

12. Which famous people visited?

King Albert I of Belgium came in 1925. Aldous Huxley came in 1926. President Brezhnev of the USSR came in 1959.

Many Nobel laureates have visited, among them Niels Bohr, Subrahmanyan Chandrasekhar, Har Gobind Khorana and Venkatraman Ramakrishnan.



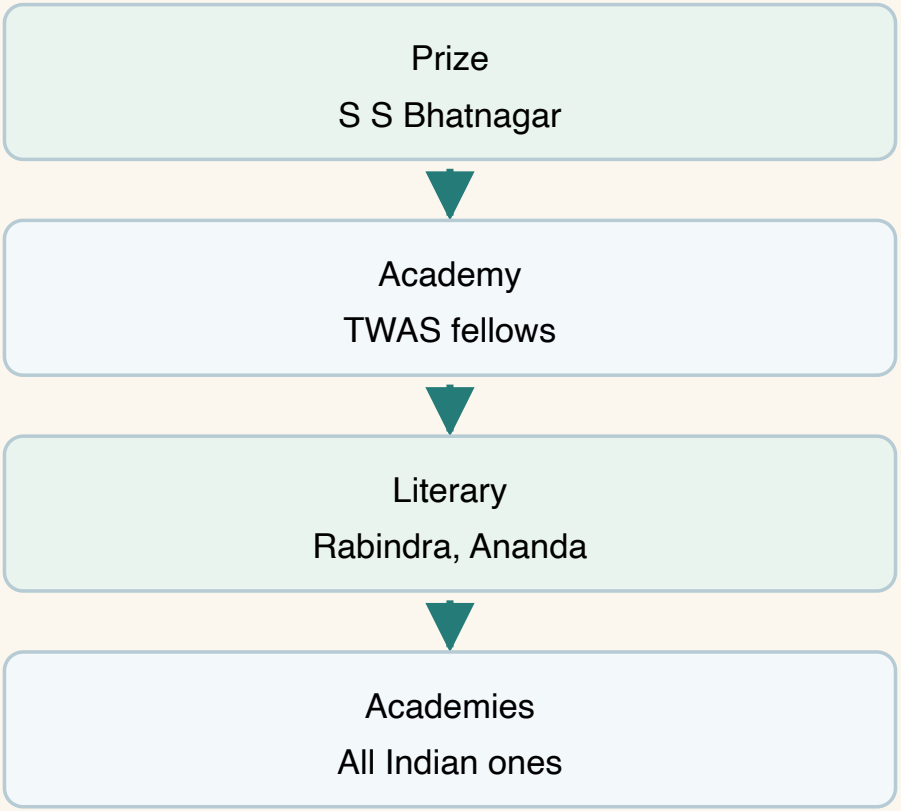
Kings, writers and Nobel laureates came.

Source: Bose Institute, History, item 12

13. Which honours did its scientists win?

Institute scientists have won the S.S. Bhatnagar Prize. Some became fellows of The World Academy of Sciences (TWAS) and of every national science academy in India.

Some also won the top Bengali literary awards, the Rabindra Puraskar and the Ananda Puraskar. The entomologist Gopal Chandra Bhattacharya, a popular Bengali science writer, won both.



Its scientists won many honours.

Source: Bose Institute, History, item 13

How do exams test the Bose Institute?

Questions test the founder, the year and the place. Learn the pairs below.

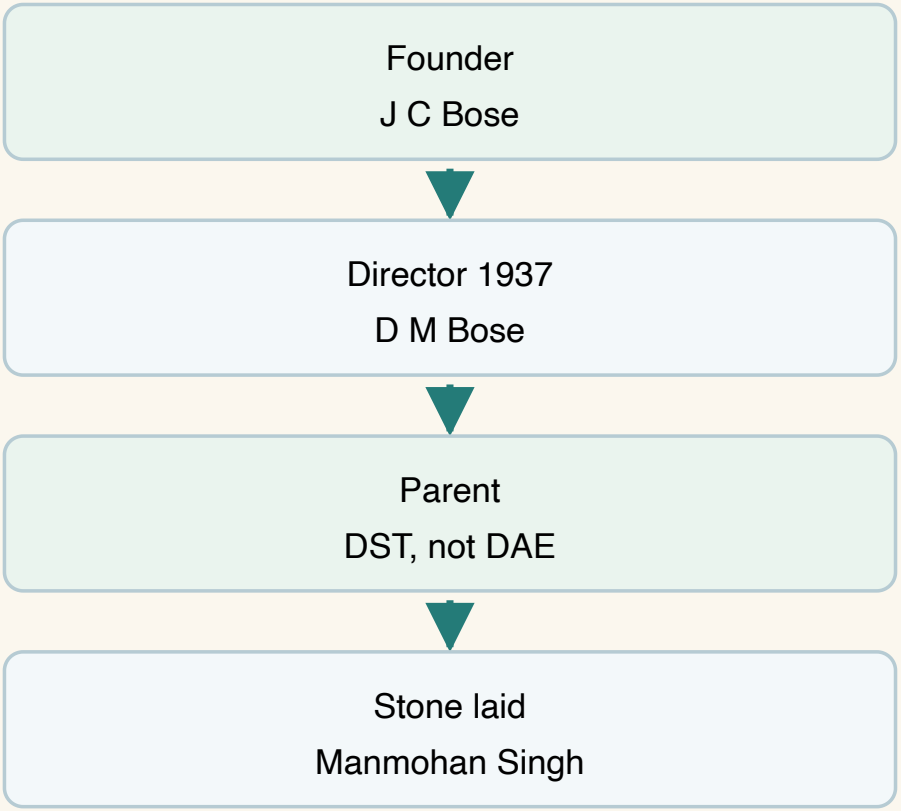
14. Which pairs and traps should you remember?

Bose Institute goes with J.C. Bose, founded 1917 in Calcutta. It has nothing to do with Satyendra Nath Bose and his boson.

The Institute calls itself Asia's first modern research centre for interdisciplinary research. It is run by DST, not by the Department of Atomic Energy.

Bose Institute	Boson
J C Bose	S N Bose
1917, Calcutta	Not this Institute
Under DST	

Do not mix the two Boses.



Keep names and dates apart.

True or False: The Bose Institute works under the Department of Atomic Energy.
Source: Bose Institute, History, item 14

Source: Bose Institute, Founder, item 14

Source: Bose Institute, Introduction, item 14

Four questions to think through

Why did Bose call the Institute a temple?

Bose wanted science to serve the nation, not just one lab. He opened it on his birthday and gave it to the country. A temple is a place of service for all. So the Institute was meant to be open to all.

Why did Bose build a campus in Darjeeling?

Darjeeling is high in the hills. The air there is clean and cool. Bose built the Mayapuri and Haimavati buildings in 1920. Later scientists used the height for cosmic ray work.

What does autonomous grant-in-aid mean?

Autonomous means the Institute runs its own affairs. Grant-in-aid means the government pays for it. So DST funds the Institute but does not run each study. Scientists choose their own research.

Why do people mix up the two Boses?

Jagadish Chandra Bose founded the Institute. Satyendra Nath Bose is known for the boson. Both are famous Bengali scientists with the same surname. The Institute is named for the first.

Check your understanding

Your 7 quick checks Answered 0 of · Correct
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Continue to the practice MCQs

✅ Test Yourself

Try practice questions on the Bose Institute, its founder and its campuses.

Practice MCQs

1. On what date did Jagadish Chandra Bose found Bose Institute, dedicating it to the nation on his birthday?

A. 23 November 1937

B. 30 November 1917

C. 14 September 1895

D. 1 May 1971

See answer ↓

2. Who wrote the song "Matri mondiro punya angono", which is now the anthem of the Bose Institute?

A. Rabindranath Tagore

B. Abanindranath Tagore

C. Nandalal Bose

D. Swami Vivekananda

See answer ↓

3. From where was the pink sandstone for the Bose Institute building brought?

A. Chunar

B. Makrana

C. Kota

D. Jaipur

See answer ↓

4. Since May 1971, the Bose Institute has been an autonomous grant-in-aid institution of which department?

A. Department of Atomic Energy

B. Department of Science and Technology

C. Department of Biotechnology

D. Department of Space

See answer ↓

5. Who inaugurated the Unified Academic Campus of the Bose Institute at Salt Lake on 29 June 2017?

A. Manmohan Singh

B. Narendra Modi

C. Ram Nath Kovind

D. Pranab Mukherjee

See answer ↓

6. Who was the Director of the Bose Institute from 1937 to 1967, after its founder?

A. Satyendra Nath Bose

B. Sourindra Mohan Sircar

C. Debendra Mohan Bose

D. Sibaji Raha

See answer ↓

7. What did Debendra Mohan Bose and Biva Choudhury study at the Darjeeling campus of the Bose Institute?

A. Cholera toxin

B. Plant growth

C. Cosmic rays

D. Radio waves

See answer ↓

8. Which Nobel-winning scientist nominated Shambu Nath De of the Bose Institute for the Nobel Prize?

A. Niels Bohr

B. Arthur Kornberg

C. Robert Millikan

D. Joshua Lederberg

See answer ↓

Answer Key

1. **B.** 30 November 1917 is the answer. Bose opened the Institute on his birthday. He dedicated it to the nation in a speech called "The Voice of Life". He called it not merely a laboratory but a temple. The year 1937 is when he died, not when he founded it. The year 1971 is when DST began funding it. Memory hook: his birthday, 1917. ↑ Q1
2. **A.** Rabindranath Tagore is the answer. He wrote it for the opening day in 1917. Tagore was visiting the USA at the time. Abanindranath Tagore and Nandalal Bose helped the Institute with its art, not its song. Vivekananda supported Bose but did not write it. Memory hook: the poet gave the Institute its song. ↑ Q2
3. **A.** Chunar is the answer. Bose wanted the building to be one of the finest in the city. The stone came from Chunar. The stone craftsmen came from Benaras. A young architect named Mitter built it. Makrana is known for white marble, not pink sandstone. Memory hook: pink stone from Chunar. ↑ Q3
4. **B.** The Department of Science and Technology (DST) is the answer. DST was set up in May 1971. Since then the Institute has been autonomous. Autonomous means it runs its own affairs. Grant-in-aid means the government funds it. Atomic energy is a common wrong guess, but it is not the parent body. Memory hook: Bose Institute means DST. ↑ Q4
5. **D.** Pranab Mukherjee is the answer. He was then the President of India. The campus is at Sector V, Salt Lake, in East Kolkata. Prime Minister Manmohan Singh had laid its foundation stone on 2 June 2012. So the stone-layer and the inaugurator were two different people. Memory hook: Singh laid it, Mukherjee opened it. ↑ Q5
6. **C.** Debendra Mohan Bose is the answer. He led the Institute for thirty years. Jagadish Chandra Bose was Director from 1917 to 1937. Sourindra Mohan Sircar followed Debendra Mohan Bose in 1967. Sibaji Raha served from 2006 to 2016. Satyendra Nath Bose, of the boson, never directed it. Memory hook: founder first, then his successor. ↑ Q6
7. **C.** Cosmic rays is the answer. Cosmic rays are fast particles that reach Earth from space. Jagadish Chandra Bose built the Darjeeling buildings in 1920. Today the campus hosts a national facility for astroparticle physics and space science. Plant growth was a topic for the founder, and cholera toxin for Shambu Nath De. Memory hook: high hills, high-energy rays. ↑ Q7

8. **D.** Joshua Lederberg is the answer. De worked on the cholera toxin and how it acts on cells. Lederberg himself visited the Institute. Bohr, Millikan and Kornberg were also among its visitors. But the record names only Lederberg as De's nominator. Memory hook: De and Lederberg, cholera and the Nobel. ↑ Q8

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