Newspaper Clips

July 15-16, 2012

July 15

Hindu ND 15/07/2012
P-10

Our IITs have a lot to catch up

V. Sethuraman

None of the IITs is anywhere near world standards today. Not a single IIT has made its mark in the Top 200 Quacquarelli Symonds (QS) World University Rankings in 2011.

The IIT system is the brainchild of the 22-member Nalini Ranjan Sircar Committee that was constituted in 1946 for the creation of higher technical institutions for post-War industrial development of India. This committee recommended the establishment of such institutions along the lines of the Massachusetts Institute of Technology (MIT) in the U.S. with affiliated secondary institutions. As per the recommendation, four IITs were set up in Kharagpur, Bombay, Kanpur and Madras. The IIT, Delhi, was established later, in 1961.

The IIT, Kharagpur, the first in the series and started in May 1950, was known as the Eastern Higher Technical Institute. It was set up in collaboration with MIT. The name "Indian Institute of Technology" was adopted before the formal inauguration of the institute on August 18, 1951.

Planning for the IIT, Bombay, began in 1957 with the participation of UNESCO, utilising the contribution of the Union of Soviet Socialist Republics (USSR). It received substantial assistance in the form of equipment and expert services from the USSR from 1956 to 1973. UNESCO also offered a number of fellowships for training Indian faculty members in the USSR, which provided additional assistance to supplement the Aid Programme.

The IIT, Kanpur, was started in December 1959 and during the first 10 years, it benefited from the Kanpur Indo-American Programme (KIAP), where a consortium of nine U.S. universities — MIT; the University of California, Berkeley; the California Institute of Technology; Princeton University; the Carnegie Institute of Technology; the University of Michigan; Ohio State University; the Case Institute of Technology; and Purdue University — helped set up research laboratories and academic programmes. The IIT, Kanpur, was the first institute in India to offer the Computer Science course in August 1963.

The IIT, Madras, was started when federal Germany signed the first Indo-German Agreement in Bonn in 1959. This provided for the services of German professors, training facilities for Indian faculty members and supply of scientific and technical equipment for establishment of the central workshop and laboratories at the IIT, Madras. The institute was declared an 'Institute of National Importance' in 1961.

With the assistance of the British Government, The College of Engineering & Technology was established in 1961 in Delhi which was later declared an institution of national importance and renamed the 'Indian Institute of Technology, Delhi' in 1963. This institute was started in collaboration with Imperial College London, which played a pivotal role in initiating the academic activities.

The Indian Institute of Technology, Guwahati, was established in 1995 and the University of Roorkee was converted into an IIT in 2001.

After six decades of the inception of the first IIT in Kharagpur, it is pertinent to introspect on how far these institutes have achieved the excellence envisioned for them by the founding fathers. Although these institutes were expected to become world-class centres of learning, none of the IITs is anywhere near world standards today. Not a single IIT has made its mark in the Top 200 Quacquarelli Symonds (QS) World University Rankings in 2011. The IIT, Bombay, was the only Indian institute which managed to find a place for itself in the Top 200 in 2010 but this year, it too slipped 38 places and ranked 225. The same way, the Delhi and Madras IITs, which had ranked 202 and 262 in 2010, fell to 218 and 281. The other IITs featuring in the rankings, including that of Kanpur, Kharagpur, Roorkee and Guwahati, do not find a place in the Top 300 World University Rankings. The QS ranking, conducted every year, is based on employer and academic reputation and research quality.

In the recent past, attempts have been made to make exposure of the IIT system to a larger number of candidates. Eight more IITs have been established in Bhubaneswar, Gandhinagar, Hyderabad, Indore, Jodhpur, Kanpur, Patna and Ropar. In an affirmative action, concession for the weaker sections has been offered in admissions and in recruitment of faculty. The Joint Entrance Examination (JEE) is being synchronised with that of other engineering colleges. The point to ponder now is whether steps are also being taken to bring all these IITs on a par with world-class institutions.

(The writer is a past president of the IIT Delhi Alumni Association. Email: sethu48@yahoo.com)

Coaching classes — boon or bane?

Dr. Umanath Nayak

The last few months have been a period of turmoil in the family.

My son has reached that phase where he has to take one the most important decisions of his life. No, I am not talking about selecting a life partner; or even deciding upon the right job or career. The question is: Should he or should he not enrol in one of those guaranteed-for-success institutes for IIT-JEE coaching like all his friends have done?

He having decided that he was not going to follow in my footsteps and become a doctor, engineering was the only other obvious choice.

In his teenager lingo, doctors have such a "sad life," meaning "too much hard work." I did not argue with him; he did have a point! I am a prime example!

The boy just having completed Standard X and not being experienced in taking such life-changing decisions, it was left to my wife and me to give him the direction.

I started my research on the subject — the primary source being my equally 'sad' colleagues in the hospital. One disgruntled chap recounted how the entire family got into 'war mode' in preparation for his elder son's grand entry into the hallowed portals of the IIT. They all woke up well before dawn, the father to drop him at a popular coaching centre at the other end of the city which boasted of a sure-fire formula for success, the mother to cajole her child into eating something to nourish those grey cells while he mugged up all those theorems in algebra and trigonometry and the younger son, curious about what he would get into if his parents chose the same third degree for him too later on.

In a show of solidarity with the boy, for those two years, TV and all other forms of entertainment were strictly banned.

The family had an early dinner and went to bed by 9 p.m. So it was indeed heartbreaking when despite all this, the boy missed a seat in the IIT and with that an opportunity of being among those chosen few. The family went into mourning for a full month.

The boy subsequently got into another equally reputed engineering institute and is none the worse for wear (though apparently even now he sometimes wakes up in the middle of the night and starts dressing up — muttering something about having to attend his coaching class).

My colleague now swears against this type of coaching and is dead against his younger son repeating the same mistake.

On the other hand, two of his colleagues from the same department swear by this method of regimented training. "This is the only way of getting into IIT" — they say knowledgeably. The son of one of them obtained the top rank in the State following the same *modus operandi*. Sacrificing two years in the prime of his life for the sake of a guaranteed future they say is quite acceptable and they have no reservations about recommending this system of education to others.

But something bothered me.

If students are going to spend two years focussing only on the methodology of cracking the IIT-JEE, what about knowledge and intellectual growth they are supposed to imbibe in these crucial years of their development? Does getting into an IIT indeed guarantee a great future for all and sundry? Do students from other colleges not excel in engineering?

I am still mulling over some of these questions. In the meantime, my son plays basketball in the evening and watches television at night.

And I continue to wake up after sunrise!

(The writer is a consultant Head and Neck Oncologist, Apollo Health Centre, Jubilee Hills, Hyderabad. Email: drumanathnayak@gmail.com)

Hindustan Times ND 15/07/2012

P-15

WHO'S THE NEXT BOSON?

EUREKA! The Bose in Higgs boson has put the spotlight back on Indian scientists. Here are others who're at the brink of breakthroughs or have made key contributions to their fields

Charu Sudan Kasturi
■ charu.kasturi@hindustantimes.com

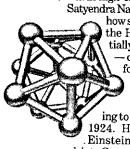
Theoretical physicist Ashoke Sen has spent almost three decades chasing a high-risk dream. Not all scientists are convinced about String Theory, an elegant model that if proven could explain how nature's most basic forces work. If the theory is eventually junked, Sen's work on it could be relegated to a footnote in science research. But if the theory is proven, Sen would have helped us understand the universe better than ever before.

He is among several Indian scientists who in the past decade have led path-breaking research on subjects ranging from exotic particles and esoteric forces to low-cost technology that has helped thousands of poor families.

Their work comes at a time when Indian scientists have better access to resources and global opportunities than before.

But challenges remain as India competes with the developed world and China in high-end research.

Satyendra Nath Bose, who explained how subatomic particles like the Higgs boson — potentially discovered last week — dance, may never have found recognition outside India without the help of Albert Einstein.



No journal was willing to publish Bose's work in 1924. He instead wrote to Einstein, who translated the work into German and had it published in a top journal, bringing Bose recognition and the opportunity to work with other legendary scientists like Marie Curie.

Top Indian scientists no longer need validation from western scientists. "Very often, there is this implicit suggestion that a western mafia is preventing us from getting to the top," says Thanu Padmanabhan, one of India's best-known cosmologists. "That's not true."

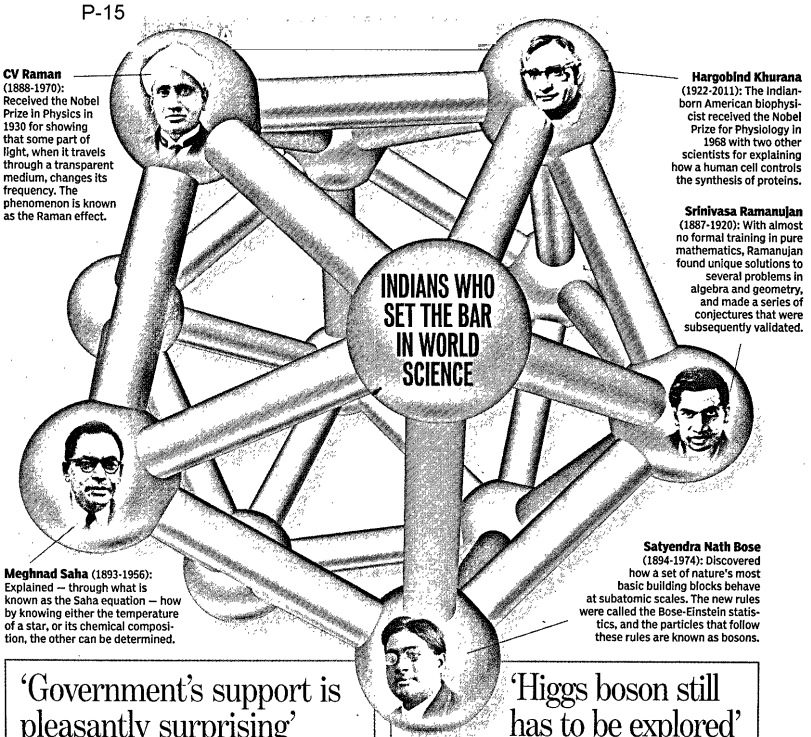
According to a report by Elsevier, the world's leading research journal publisher, Indian scientists are among world leaders in 159 fields, and the country's research volume has increased by 14.3% since 2006. Though China is a world leader in more fields and has witnessed higher research growth, the quality of Indian research — measured by the average number of times a research paper is cited by others — is marginally superior.

But India's investment in research has remained stagnant at 0.9% of its GDP since 2003 despite repeated government promises to double the ratio to 2% of the economy.

The country's science institutions also need a change in their research culture, says Ashok Gadgil, head of energy and environmental technologies at the University of California, Berkeley. "Young researchers should be able to openly argue and debate hypotheses with seniors without involving egos," Gadgil says. "You want people to be treated intellectually equal."

To really encourage bright Indian scientists to stay in India and produce top research though, it may need more than change at just the country's scientific institutions.

"My work gets recognised globally, but very often it is recognised in India only after it gets honoured in the west. That's a worrying trend," Padmanabhan says. "That needs to change."



CV Raman (1888-1970): Received the Nobel Prize in Physics in 1930 for showing that some part of light, when it travels through a transparent medium, changes its frequency. The phenomenon is known as the Raman effect.

Hargobind Khurana (1922-2011): The Indian-born American biophysicist received the Nobel Prize for Physiology in 1968 with two other scientists for explaining how a human cell controls the synthesis of proteins.

Srinivasa Ramanujan (1887-1920): With almost no formal training in pure mathematics, Ramanujan found unique solutions to several problems in algebra and geometry, and made a series of conjectures that were subsequently validated.

Meghnad Saha (1893-1956): Explained — through what is known as the Saha equation — how by knowing either the temperature of a star, or its chemical composition, the other can be determined.

Satyendra Nath Bose (1894-1974): Discovered how a set of nature's most basic building blocks behave at subatomic scales. The new rules were called the Bose-Einstein statistics, and the particles that follow these rules are known as bosons.

'Government's support is pleasantly surprising'

Thanu Padmanabhan, 55
Professor, IUCAA, Pune
Big work: Helping decode the mysteries of gravity

Arguing that Albert Einstein's seminal theory on gravity needs refining — even if only at scales a billionth the width of a hair strand — is similar to questioning Sachin Tendulkar's batting technique on a particularly quirky pitch. It isn't easy. Like gravity, it can pull you down. But since 2002, Thanu Padmanabhan — or Paddy as he is known to friends — has repeatedly shown results that substantiate his belief that gravity must be understood differently at subatomic scales, helping nuance Einstein's theories from almost a century ago. Several other teams of scientists have also independently found his theory to hold. In the process, he has emerged as one of India's leading cosmologists, is the president of the cosmology commission of the International Astronomical Union, and is the recipient of numerous global awards apart from a Padma Shri in 2007. Padmanabhan's foray into quantum cosmology started with his PhD thesis in 1979 at the Tata Institute of Fundamental Research in Mumbai. "But I was unhappy with the attempts being made then to reconcile gravity with quantum physics," he recalls.

Padmanabhan argued against trying to directly reconcile Einstein's equations of gravity with quantum mechanics, and pushed for a new approach. It worked. The physicist is optimistic about research in India. "I have been very pleasantly surprised by the support for good research from successive governments, irrespective of parties," he says. "Things are looking up for research in India." — *CSK*

'Higgs boson still has to be explored'

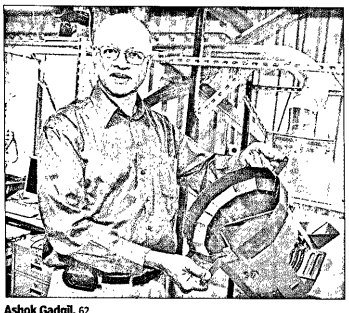
Rohini Godbole, 60
Professor, IISc, Bangalore
Big work: Physicist at CERN working on the Higgs boson experiment

For this particle physicist who teaches at the Indian Institute of Science in Bangalore, being at CERN when the recent Higgs boson (HB) announcement was made was a thrilling culmination of over three decades of hard work. "Higgs boson has given a raise to issues that still need to be explored," she tells HT over the phone from Geneva. Godbole, who's on her way to Vietnam for a series of lectures, was part of the background researchers worldwide who have been working on the Higgs boson — or as its acknamed the God Particle — since the 70s. But the journey has just begun because the road ahead entails testing if this "gigantic and complicated" model has been postulated in nature. Why is this discovery so important? "We want to find out if there's more to physics than is known, a quest to understand how different forces in nature work," she explains.

Godbole, who's also hailed as an activist for women in science, has co-authored a book on women scientists in India and is the chief editor of *Pramana* — Indian Journal of Physics. She has been working in the field of particle physics for over three decades now and has authored over 200 research papers with many being highly cited.

Godbole grew up and studied in Pune when the "only science available to women was *home science*". She completed her education IIT Bombay and later State University of New York, and calls her passion for physics a "fortuitous thing that happened to me".
— *Shalini Singh*

'We just need to change our research culture'



Ashok Gadgil, 62
Director, Energy and Environment Technologies Division, Lawrence Berkeley National Laboratory, Berkeley, US
Big work: Developed stoves needing less firewood&cheap water purifiers

He didn't start the fire. But in Darfur, Sudan's strife-torn western region, Gadgil has helped douse the fire of violence from the lives of thousands of women — using technology as his tool. The energy and environment researcher at the University of California, Berkeley, developed a low-cost stove that uses less firewood. The Berkeley-Darfur stove, as it is called, has helped over 100,000 displaced people in Darfur reduce the risk of violence through exposure while searching for firewood in the region, which witnessed a bloody civil war from 2003 to 2010. It has also saved their lungs. Gadgil also found an inexpensive method to filter poisonous arsenic from water. UV Waterworks, as the project is called, uses ultraviolet light from a mercury discharge to purify water. The project has been particularly successful in Bangladesh. It was an easy decision for Gadgil to join the sustainable energy and environment sector. "You get to help people and do the work you like," Gadgil says, laughing. "What could be better?" Gadgil pursued his PhD at the University of California, Berkeley after completing his MS from IIT-Kanpur. His work has been featured in two films, and has won several awards. The scientist is hopeful about India's research future, but wants to see some change too. "There is no question about the brilliant quality of talent that we have in India," Gadgil says. "We just need to change our research culture." — *CSK*

HOW MUCH THE WORLD SPENDS ON R&D

Country	R&D expenditure (USD, billions)	% of GDP
US	405.3	2.7
China	153.7	1.4
Japan	144.1	3.3
Germany	69.5	2.3
S. Korea	44.8	3.0
France	42.2	1.9
UK	38.4	1.7
India	**36.1**	**0.9**

NOTE: R&D EXPENDITURE AND GDP IN REAL (PPP) TERMS, FOR 2011.

HOW INDIA IS DOING IN SCIENCE RESEARCH

- India's research volume has grown from 2006 by 14.3%, less than China's growth of 22.8%
- But India's research quality is marginally better — on an average, a paper is cited 2.7 times by other researchers, compared to 2.2 for Chinese research.
- India is among world leaders in 159 areas of research — chemistry topping the list. China is among leaders in 885 research areas.
- IISc Bangalore, IITs, BARC and CSIR laboratories are India's research leaders.

SOURCE: ELSEVIER PUBLICATIONS

'In our field, there are simply no excuses'

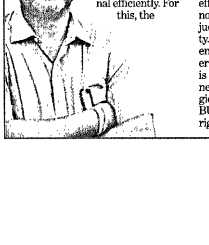
Ashoke Sen, 56
Professor, HRI, Allahabad
Big work: Edging us closer to an understanding of nature's forces

With a balding head and thick glasses, Sen is an unlikely poster boy. But in the world of theoretical physics, there are few Indians known or respected more than Sen. From the early 1990s, Sen's dramatic research has repeatedly redefined how physicists approach one of the most contentious, yet hopeful, theories of modern science: string theory. The theory aims to reconcile two of the most fundamental theories that guide our understanding of the world. It all started for Calcutta-born Sen during his MS at the Indian Institute of Technology, Kanpur in the late 1970s. "I had been interested in particle physics which deals with the fundamental constituents of matter," Sen recalls. But it was in the 1980s that Sen said he figured that string theory was his calling. "I came to realise that string theory offers us the best hope of finding a unified theory of all matter and forces," he says. Sen pursued his PhD at Stonybrook University, and then worked in particle physics at Fermilab near Chicago and the Stanford Linear Accelerator Center (SLAC) at Stanford University, before returning to work at the Tata Institute of Fundamental Research. He was made a Fellow of the Royal Society in 1998 and received the Padma Shri in 2001. Sen sees no insurmountable challenges for Indian theoretical physics. "In our field, there are no excuses." — *CSK*

'India can lead the world in scientific research'

Srikanta Pal, 44
Professor at BIT, Mesra, Ranchi
Big work: Has made important contributions to radio astronomy

At the age of three, Ranchi-based Professor Srikanta Pal, unable to speak then, learnt his Bengali and English lessons by pointing out the right answers to his mother. Forty years later, Pal contributed to the working of the world's third largest telescope, which helps astronomers capture the lunar signal efficiently. For this, the University of Birmingham (BU) has conferred him the title of honorary research fellow for 2012-2014 for his contribution to radio astronomy. This is Pal's second significant achievement after the first one in 2009 where he developed a device that enabled the Green Band Telescope — world's largest radio telescope in Green Bank, USA — to enhance its observation range. Pal, who did his masters in microwave engineering from Jadavpur University, went on to do a DPhil from Oxford University and came back to join IIT Delhi and IIT Roorkee. "I have been inspired by the likes of SN Bose, JC Bose and CV Raman," he says. Pal believes that there should be an effective system where quality and not quantity of research should be judged by an independent authority. "India can lead the world in scientific research with adequate government support. Global warming is the problem of the future. We need to focus on green technologies." With his upcoming stint at BU, fate sure pointed Pal in the right direction. — *Shalini Singh*



Hindu ND 15/07/2012
P-10

Engineers are not the end product

Ravi Kumar Tadepalli

Over the years the Indian Institutes of Technology have proved their excellence in engineering education. Two main reasons were the selection of students and the fantastic faculty. The JEE produced the best students and the faculty moulded into the best in the world. The goal of the students was excellence in technology and being the best in this field.

But that was some time ago. Times have changed.

A student came up to me and asked which branch of engineering he should take to complete the IIT easily and get into an Indian Institute of Management. Students ask for internship in banks and help from the alumni for this endeavour. A III B. Tech student asks for opportunities in music at an entrepreneur meet in an IIT. IIT toppers take high-paying jobs in non-engineering companies.

IIT toppers take high-paying jobs in non-engineering companies.

All these may seem stray cases. But isn't it surprising that the top placement firms in the IITs are consulting, IT, banking and insurance? They seem to be taking away the chunk of the toppers. The number of B.Tech students opting for higher studies in engineering and research also seems to have declined.

The IITs were formed to improve technology and produce world-class engineers and scientists. But they have now been reduced to a brand image without the zing of engineering. The goal of students seems to be cracking the JEE, and not engineering. All these students are confident of completing the course with at least 5 point CGPA. Not really interested in engineering.

What is the reason? The quality of the students? The curriculum? The teachers or the lack of them? The parents? The coaching classes? The market opportunities for engineers? The JEE itself?

The coaching classes seem to have mastered a way of cracking the JEE. The student is bright and taught the methodology of cracking the JEE. Maybe, the JEE must not be so structured as we have it now. Maybe, it should be more randomised in the type of questions. Maybe, the questions should be related to more practical aspects of engineering. But if you want to be a top-notch engineer, it takes much more than that and years of painstaking learning in industry. Is it possible that the student is not aware of this aspect of engineering? Can the JEE bring this aspect to the fore?

Sometimes, parents force their children into the IITs because of their brand image. I wonder how many of them insist that their children stick to engineering as a career option?

Engineering seems to be one of the few fields where there is no compulsory internship like in medicine, law and CA. This is one of the reasons why students may not be fully aware of the beauty and possibilities of engineering.

Engineering is also a field which is like a joker in a pack of cards. The graduates fit into any career! Naturally, the student will graduate into a more lucrative/easier career. Would a barrier to this help in getting committed students?

Imagine the plight of the professors! They have to deal with more number of uninterested students. They teach engineering knowing fully well that very few of their students are going to use what they are taught. What can be more demoralising to the teacher in a professional course? With the number of institutes multiplying, can there be enough teachers of that high calibre? We seem to be diluting the importance of a temple of excellence.

Once upon a time, we were grappling with brain drain when most of the IITians went abroad. Now we have a great environment and demand for good engineers but we don't have them! True, it is a field where you need to build a reputation over time and the remuneration does not come as fast. It requires a great deal of passion to become a good engineer.

Does all this mean that the IITs have lost their relevance? To a certain extent, yes. They are not serving their basic purpose. If the IITs cannot produce great engineers, the purpose is defeated. We are unable to get the students interested in engineering. Yet, we are increasing the number of the IITs.

We are probably producing good thinkers at the IITs, which is why other fields are picking up the students. So should we rename it the Indian Institute of Thinkers?

(The writer is an IITian. Email: rkbala@hotmail.com)

Publication: The Times Of India Delhi;Date: Jul 15, 2012;Section: Times Nation;Page: 14;

Govt nod for Mars mission soon

Srinivas Laxman | TNN

Mysore: ISRO chairman K Radhakrishnan on Saturday said the government's nod to the country's Mars mission is expected soon.

"India's much-awaited mission to Mars is in the final stage of approval," said Radhakrishnan. The mission will be launched from Sriharikota in Andhra either in November 2013, 2016 or 2018.

"Many studies have been done relating to this mission," said Radhakrishnan.

RED PLANET BECKONS

A scientist on condition of anonymity said global interest and excitement following NASA's Mars Science Laboratory (MSL) landing on Mars on August 6 could prompt the Indian government to clear the programme. "We're waiting to go to Mars," said a scientist.

Initially, nine scientific experiments were designed for this flight. This could be reduced considering the weight factor. The rocket will be an advanced version of the highly-proven four-stage Polar Satellite Launch Vehicle, designated as PSLV-XL, used for India's mission to moon, Chandrayaan-1.

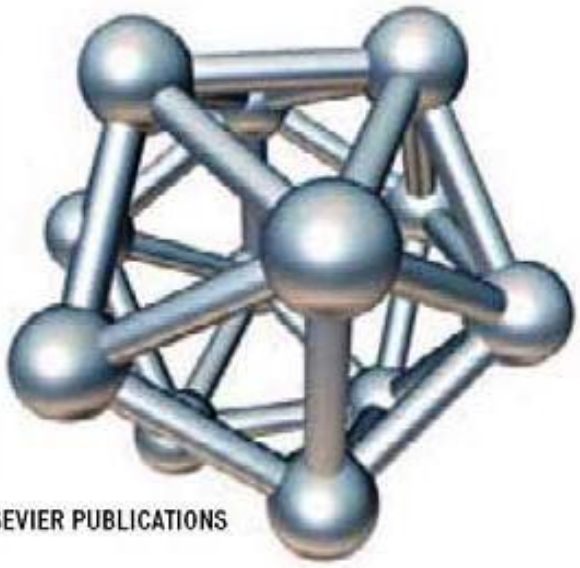
Radhakrishnan said India's first dedicated astronomy satellite, Astrosat, will be launched in 2013. "All the instruments are going through their final evaluation and it'll be a national laboratory available to scientists both in India and abroad," he said. The mission was delayed for various reasons. About the Geo Synchronous Satellite Launch Vehicle Mark 2, he said the flight stage of the cryogenic engine should be ready in November 2012.

HT, Kolkata

HOW INDIA IS DOING IN SCIENCE RESEARCH

- India's research volume has grown from 2006 by 14.3%, less than China's growth of 22.8%
- But India's research quality is marginally better — on an average, a paper is cited 2.7 times by other researchers, compared to 2.2 for Chinese research.
- India is among world leaders in 159 areas of research — chemistry topping the list. China is among leaders in 885 research areas.
- IISc Bangalore, IITs, BARC and CSIR laboratories are India's research leaders.

SOURCE: ELSEVIER PUBLICATIONS



July 16

Hindustan Times ND 16-Jul-12 P1

In new IIT entrance test, cut-offs to vary widely across boards

Vanita Shrivastava
vanita.shrivastava@hindustantimes.com

NEW DELHI: In a quirky scenario, a student of the West Bengal class 12 board will need just 58% to be eligible to take the IIT-Joint Entrance Exam (JEE) next year while an aspirant from the Tamil Nadu board will have to score nearly 78% to make the cut.

Preliminary data of seven boards across the country shows that the percentage required to be in the top 20 percentile — a necessary condition to be eligible for IIT-JEE next year — will vary for different boards.

The new pattern for IIT will have two exams— mains and advanced.

The final rank will depend on the performance in the advanced exam, provided a student is in the top 20 percentile of his or her board.

So far, the eligibility criterion for IITs was that a student should score a minimum of 60%.

The new pattern changes all that. So, if you're a student who wants to make it to the top 20 percentile bracket this year, you'd have to score 77.8% in the CBSE board, 78.1% in the Tamil Nadu board, 67.5% in Karnataka, 65% in Uttar Pradesh, 64% in Madhya Pradesh and just 58% in the West Bengal board exam.

These figures would apply only for general category students.

For students seeking to take the test under various quotas, it would be less.

Separate data will be compiled for these categories soon.

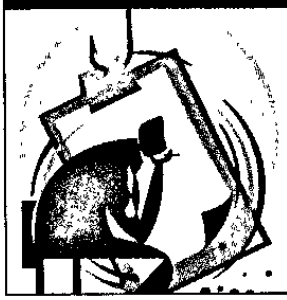
The Council of Boards of School Education (COBSE), which compiled the data this year, said all state boards have been asked to put up their percentage figures in the public domain soon.

"Once the student knows the percentage, he (or she) can prepare for professional entry into IITs accordingly. There will be just minor variations in this figure every year," sources in COBSE said.

"Next year, the numbers would fluctuate around this data. So, an IIT aspirant can know how much he or she should aim for in the boards," said Gautam Baruah, IIT-Guwahati director.

Sources said the ICSE, CBSE, Andhra Pradesh and Tamil Nadu boards are most likely be in the highest percentage bracket. Boards such as those of West Bengal, Jharkhand and Bihar will be at the lower end.

ELIGIBILITY PERCENTAGE FOR IIT IN DIFFERENT BOARDS



For general category students only

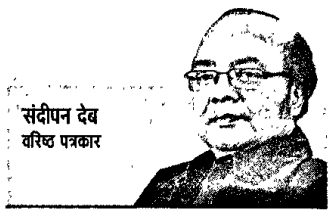
Tamil Nadu	78.1%
CBSE	77.8%
Maharashtra	73.4%
Karnataka	67.5%
Uttar Pradesh	65%
Madhya Pradesh	64%
West Bengal	58%

Illustration: ABHIMANYU SINHA

Hindustan ND 16/07/2012 P-10

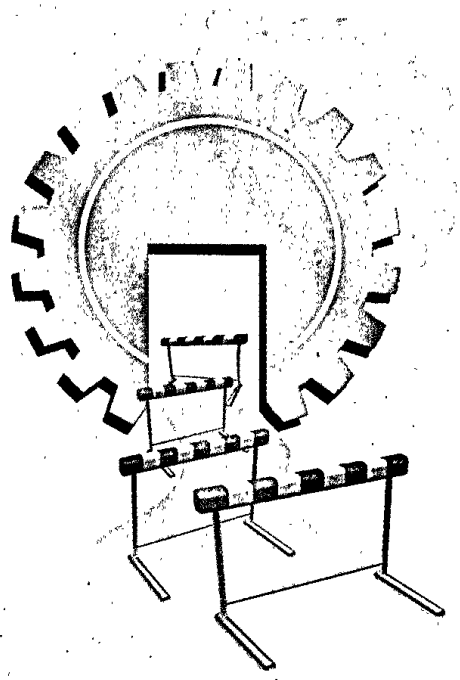
आईआईटी की जड़ें खोदने की नीति

दाखिले के लिए बारहवीं के अंकों को लेकर जो सनक दिख रही है, वह हास्यास्द है। प्रतिभा मापने का पैमाना 'पर्सेंटाइल' नहीं हो सकता।



संदीपन देब
वरिष्ठ पत्रकार

यह वाकई हैरत में डालने वाली बात है। देश की यह पहली ऐसी सरकार है, जिसमें आईआईटी से निकले तीन-तीन मंत्री हैं और फिर भी इस शिक्षण संस्थान में दाखिले की प्रक्रिया को लेकर इतना बड़ा बवाल मचा हुआ है। जयराम रमेश, अजित सिंह और नंदन नीलेकणी (जिन्हें केंद्रीय मंत्री का दर्जा हासिल है), तीनों आईआईटी से निकले हैं। दरअसल, यह मामला भी यूपीए-दो सरकार की असाध्य-सी दिखती बीमारी का ही एक लक्षण है- इस सरकार का हर सदस्य अपनी मनमानी कर रहा है और केंद्रीय नेतृत्व इतना कमजोर है कि वह दखल दे पाने की स्थिति में नहीं है। इस बात का कोई सुबूत नहीं है कि केंद्रीय मानव संसाधन विकास मंत्री कपिल सिब्बल ने 'एक देश, एक प्रवेश परीक्षा' के प्रस्ताव की घोषणा करने से पहले कैबिनेट के अपने उन साथियों को भी इस बारे में सूचित किया हो, जिनके पास आईआईटी से संबंधित निजी अनुभव हैं। (वैसे मेरी राय में एक प्रवेश परीक्षा का यह प्रस्ताव हाल के वर्षों में भारतीय शिक्षा-क्षेत्र का सबसे बड़ा फरेब है। यह सिर्फ दो प्रवेश परीक्षाओं को एक करता है, जबकि शेष सभी को यूं ही छोड़ देता है।)



डी श्रीनिवास

बहरहाल, तमाम आईआईटी से संबंधित शीर्ष निकाय आईआईटी कौंसिल और आईआईटी प्रबंधनों के बीच इंजीनियरिंग में दाखिले की कार्य-प्रणाली को लेकर सहमति बन गई है। मैंने पहले भी लिखा था कि कपिल सिब्बल के प्रस्ताव का जो सबसे खतरनाक पहलू है, वह है उसका बोर्ड संबंधी नजरिया। मैंने लिखा था कि आईआईटी में दाखिला देते वक्त बारहवीं कक्षा के अंकों को जो महत्व दिया गया है, वह तो आईआईटी की 'निष्पक्षता' के ब्रांड को ही ध्वस्त कर देगा। बहरहाल, अब फैसला यह हुआ है कि बोर्ड के अंकों को महत्व नहीं दिया जाएगा, मगर अलग-अलग बोर्डों के शीर्ष बीस प्रतिशत विद्यार्थी ही यानी अपने-अपने बोर्ड में शीर्ष बीस प्रतिशत के दायरे में आने वाले बच्चे ही आईआईटी की प्रवेश परीक्षा में बैठने के योग्य होंगे।

इस व्यवस्था ने कई सवाल खड़े किए हैं और आईआईटी कौंसिल के पास इनमें से किसी का भी ईमानदार जवाब नहीं हो सकता है। मैं यहां चंद बिंदुओं को ही रख रहा हूं। चार जुलाई के हिन्दुस्तान टाइम्स के अंक में इंडियन इंस्टिट्यूट ऑफ साइंस से संबंधित एक रिपोर्ट छपी थी। उसमें 'किशोर वैज्ञानिक प्रोत्साहन योजना' (केवीपीवाई) के तहत होने वाली राष्ट्रीय प्रवेश परीक्षा में देश के 29 बोर्डों के विद्यार्थियों के पिछले दस वर्षों के प्रदर्शन का उल्लेख किया गया था। गौरतलब है कि यह प्रवेश परीक्षा बारहवीं कक्षा स्तर के देश भर के सर्वश्रेष्ठ विज्ञान छात्रों को चुनती है। उस रिपोर्ट के मुताबिक, सीबीएससी, आईसीएसई, पश्चिम बंगाल और आंध्र प्रदेश बोर्ड के छात्रों का औसत प्राप्तांक देश के अन्य बोर्डों के परीक्षार्थियों से काफी अधिक थे। मतलब साफ है। ऐसा हो सकता है कि जो छात्र शीर्ष 20 प्रतिशत में नहीं आते, भले ही इस दायरे में आए विद्यार्थियों से वे अधिक प्रतिभाशाली क्यों न हों, वे आईआईटी में नहीं जा सकते।

नेशनल इंस्टिट्यूट ऑफ साइंस, टेक्नोलॉजी ऐंड डेवलपमेंट स्टडीज के साल 2010 के आंकड़े के अनुसार, 29,000 बच्चे आईसीएसई (विज्ञान संकाय) की परीक्षा में बैठे, जबकि उत्तर प्रदेश बोर्ड में छह लाख छात्र-छात्राएं विज्ञान की परीक्षा में शामिल हुए। ऐसे में, आईसीएसई बोर्ड के सिर्फ 5,800 बच्चे ही आईआईटी के योग्य होंगे, जबकि उत्तर प्रदेश बोर्ड के एक लाख बीस हजार! और यह स्थिति तब है, जब इंडियन इंस्टिट्यूट ऑफ साइंस की प्रवेश परीक्षा के परिणाम यह बता रहे हैं कि आईसीएसई के बच्चे विज्ञान विषयों में उत्तर प्रदेश बोर्ड के बच्चों से कहीं अधिक बेहतर हैं। यानी यदि आप सर्वश्रेष्ठ बोर्ड से हैं, तो आपके लिए आईआईटी में दाखिल होने का दरवाजा कहीं ज्यादा संकरा है। साफ है, यह 'पर्सेंटाइल' कोटा हास्यास्पद और मूर्खतापूर्ण है।

आईआईटी, गुवाहाटी के निदेशक प्रोफेसर गौतम बरुआ ने इस कोटा प्रणाली को यह कहते हुए जायज ठहराने की कोशिश की कि सीबसीएसई (विज्ञान) को कई राज्य बोर्डों के मुकाबले कहीं बेहतर आर्थिक संसाधान मिलते हैं, इसलिए नए फॉर्मूले से सामाजिक समावेशीकरण को गति मिलेगी। यह शर्मनाक तर्क है। आईआईटी, कानपुर के प्रोफेसर धीरज सांघी ने इसका उचित प्रतिवाद करते हुए कहा कि 'नई व्यवस्था लोगों को इस बात के लिए मजबूर करेगी कि वे अपने बच्चों को बारहवीं में अच्छे अंक लाने के लिए अतिरिक्त कोचिंग दिलवाएं। जाहिर-सी बात है कि इससे वे लोग और अलग-थलग पड़ जाएंगे, जो ग्रामीण इलाकों में हैं या फिर आर्थिक रूप से कमजोर हैं। उनकी पहुंच में कोचिंग सेंटर नहीं होंगे। यानी आप शहरों में बसने वाले मध्य और धनाढ्य वर्ग के लोगों के लिए रास्ता आसान कर रहे हैं कि वे न सिर्फ अपने बच्चों को अच्छी कोचिंग सुविधाएं मुहैया कराएं, बल्कि किसी राज्य बोर्ड में उन्हें दाखिला दिलाकर अपेक्षित पर्सेंटाइल में पहुंचाने की कोशिश करें। साफ है, यह सामाजिक समावेशीकरण तो नहीं ही है।'

एक सवाल यह भी है कि क्या देश भर के सभी बोर्ड जून के मध्य तक अपने परिणाम घोषित कर सकेंगे, जब इंजीनियरिंग में दाखिले की प्रवेश परीक्षा होगी? फिर यह भी पूछा जाना चाहिए कि आईआईटी की प्रवेश परीक्षा में ही बोर्ड के अंकों को लेकर यह सनक क्यों? मेडिकल, लॉ और अन्य प्रतियोगी परीक्षाओं में क्यों नहीं? और फिर यूपीएससी की परीक्षाओं में भी अंकों को लेकर यह आग्रह क्यों नहीं? मेरा मानना है कि यूपीएसी की प्रवेश परीक्षाएं भी कोचिंग की कारोबारी प्रवृत्ति को बढ़ावा दे रही हैं। और सरकार को इसी बात से तो आपत्ति है। क्यों, क्या यही बात नहीं है?

इन सबका का सबसे अनैतिक (मैं जान-बूझकर इस शब्द का इस्तेमाल कर रहा हूं) पहलू यह कदम है कि अगले साल से यानी 2013 से ही ये सभी बदलाव लागू हो जाएंगे। यह जानते हुए कि इस अवधि में सभी बोर्ड या पक्ष इस बदलाव के अनुरूप खुद को बदल पाने में सक्षम नहीं हैं। लेकिन चूंकि 2014 में आम चुनाव होने वाले हैं, और चुनाव आयोग इन नाटकीय उपायों पर अपनी आपत्ति दर्ज कर सकता है, इसलिए 2013 में इन्हें लागू करना ही पड़ेगा। लेकिन क्या इस इस तरह से हम लाखों बच्चों के भविष्य को जोखिम में नहीं डाल रहे हैं?

(ये लेखक के अपने विचार हैं)

Mail Today ND 16/07/2012

P-16

IITians mentor the underprivileged

By **Neha Pushkarna** In New Delhi

PRIYANKA Palshetkar wants to become an automobile engineer. Roshan Hande dreams to be a mathematician. Jaypal Shinde wants to change the world. They may not have enough means and money yet, but all of them aspire to get a good education. Helping them and other teenagers realise their dreams are students of different IITs in the country.

For last two years, IIT students from Delhi, Mumbai, Chennai, Kanpur, and Roorkee have been reaching out to bright minds with limited resources in their areas as well as in Dehradun and Pondicherry to put them on the path to success. They select the most deserving aspirants through a series of tests and place them in coaching centres to prepare for the IIT entrance test for free. And if ever they stumble, IIT students get by their side doubling up as their mentors.

What started as a personal endeavour of two IIT-Bombay graduates in 2010 has now turned into a movement across IITs to fulfill a social responsibility. Krishna Ramkumar and Akshay Saxena began 'Avanti' to lead more underprivileged students on the road to IITs so that their talent didn't go waste. Krishna in fact left his job of two years

MAIL TODAY

Krishna & Akshay began Avanti in 2010 with the objective of providing free coaching and mentoring to underprivileged students preparing for JEE.

Started by 2 IIT-Bombay students

at an international consulting firm to run Avanti full-time. There are now eight people, including seven IIT graduates, working for Avanti day in and day out.

"During our days at IIT-Bombay, we realised not many underprivileged students made it to IITs. We thought of providing required resources to such students and opened six chapters at different IITs. The first batch started preparing in 2011 and is due to take the IIT entrance next year," Krishna, who graduated in chemistry from IIT-Bombay in 2008, said. Manisha Kukreja, who takes care of the Delhi chapter, also left her job in Malaysia to run Avanti, added: "This is what made me happy."

An IITian coaches one of the students selected.

Avanti volunteers reach out to government schools in different cities to invite deserving students to take a talent search exam held in three parts. Those with a total family income of less than ₹20,000 per month are eligible for the fellowship. "Nearly 5,000 aspirants sat for the exam in six cities for the selection of the first batch. About 120 of them were finally selected. There were children of taxi drivers, vegetable sellers and others who did not earn enough to afford a coaching for IIT entrance," Krishna said.

Avanti ties up with coaching centres which agree to give 100% scholarship to the fellows. "It's an incentive for the coaching institutes. They would any day like to coach a student with high potential to get into an IIT," Krishna said.

Those with family income ₹20k eligible

Krishna and Akshay started the operations of Avanti from the prize money of 25,000 Euros they won at a competition in Stanford in 2009. An 'angel investor' in Mumbai later augmented their funds. Every year, they also select volunteers from different IITs for mentoring the fellows. For them, the experience has been an eye-opener.

Hindu ND 16/07/2012

P-11

Sunita begins her second space odyssey

BAIKONUR (KAZAKHSTAN): Indian-American record-setting astronaut Sunita Williams, along with her two colleagues, took off for her second space odyssey on a Russian Soyuz rocket, which blasted off successfully from a cosmodrome in Kazakhstan on Sunday.

Forty-six-year-old NASA astronaut Ms. Williams, Russian Soyuz Commander Yuri Malenchenko and Japan Aerospace Exploration Agency flight engineer Akihiko Hoshide started their two-day voyage at 08.10 a.m. IST for a four-month mission on the International Space Station (ISS).

Russia's Federal Space Agency Roscosmos announced that the spacecraft departed successfully from the carrier rocket and reached intermediate orbit.

"The spacecraft separated from the third stage of the carrier rocket in a normal regime and at the designated time," the agency said.

The Soyuz TMA spacecraft is due to dock with the ISS's Zvezda service module at 10.22 a.m. IST on Tuesday.

Born in Euclid in Ohio and raised in Massachusetts, Ms. Williams, who earlier lived and worked aboard the ISS for six months in 2006-07, will further extend the record for the longest stay in space for a woman astronaut.

Ahead of the launch, she told reporters that the test mission laid the ground for a long-standing friendship and collaboration in the space programme.

She said she would be excited to watch the London Summer Olympics from the station and put a much more global perspective on the mega sporting event beginning July 27.

Ms. Williams and her team of astronauts plan an orbital sporting event to mark the Olympics.

Ms. Williams, a flight engineer on the station's Expedition 32 crew, will take over as commander of Expedition 33 on reaching the space station. The trio will join the current ISS occupants — Russian cosmonauts Gennady Padalka and Sergei Revin and NASA astronaut Joe Acaba, who have been in orbit since May 17.

ANOTHER BEGINING: *Indian-American astronaut Sunita Williams, Japanese astronaut Akihiko Hoshide and Russian cosmonaut Yuri Malenchenko, crew members of the mission to the International Space Station, wave prior to the launch of the Soyuz-FG rocket (right) at the Baikonur Cosmodrome in Kazakhstan on Sunday.* – PHOTOS: AP

The six crew members will work together for about two months. Mr. Acaba, Mr. Padalka and Mr. Revin are scheduled to return to Earth on September 17.

Before they depart, Mr. Padalka will hand over command of the station and Expedition 33 to Ms. Williams. She, Mr. Malenchenko and Mr. Hoshide will return home in mid-November, NASA said.

The new crew members are expected to conduct over 30 scientific missions during their stay aboard the ISS.

Ms. Williams, whose father hailed from Gujarat, was selected as an astronaut by NASA in 1998. She was assigned to the ISS as a member of Expedition 14 and then joined Expedition 15.

Sunita's record

She holds the record for the longest spaceflight — 195 days — for woman space travellers.

She received a master's degree from the Florida Institute of Technology in 1995.

Both Ms. Williams and Mr. Akihiko have experience on board the space station but had never before travelled on the Soyuz.

Earlier they travelled aboard a U.S. space shuttle.

"Getting my haircut. Next one will be on ISS!" Mr. Akihiko tweeted on the eve of the launch.

For Mr. Malenchenko, one of the most experienced Russian cosmonauts, it is his fifth long-duration spaceflight.

Mr. Malenchenko, who is piloting the Soyuz spaceship, was a member of three long expeditions to the Mir orbital station, the International Space Station and one shuttle flight. Russian Soyuz-family spacecraft remain the only means of transportation for crew members to and from the orbital station until at least 2015. — PTI

Hindu ND 16/07/2012

P-11

Asian space powers gear for more moon missions

Gopal Raj

MYSORE: The three major Asian space powers — China, Japan and India — are entering the next phase of their lunar exploration.

The three nations have already successfully despatched lunar probes that photographed and studied Earth's natural satellite from space. Now, all three want to send an orbiter that will circle the Moon as well as a lander that will gently settle on its surface and release a rover that will roam about.

South Korea, which is creating its own launch capability, too seems to have similar ambitions.

Media reports have quoted Chinese space officials as saying that the Chang'e-3 could leave for the Moon in 2013.

Addressing a press conference here on Saturday during an international gathering of scientists involved in space-related research, K. Radhakrishnan, Chairman of the Indian Space Research Organisation, said India's Chandrayaan-2 mission could be on its way in 2014.

Although M. Annadurai, project director of Chandrayaan-2, was scheduled to give a talk about the mission at a session of the scientific assembly of the Committee on Space Research (COSPAR) on Sunday, the presentation was cancelled.

There was, however, a talk about Japan's Selene-2 landing mission to Moon by Tatsuaki Okada of the Japan Aerospace Exploration Agency's Institute of Space and Astronautical Science.

The mission involved sending a 700 kg-orbiter along with a lander weighing about 1,000 kg. It would also carry a 100 kg rover, said Dr. Okada. The lander and rover were being designed for a mission lasting two weeks. The orbiter could operate for about a year.

- **Japan plans to send Selene-2 landing mission to Moon**
- **South Korea plans an orbiter-lander mission to Moon around 2023**

Some 70 landing sites were proposed by various research groups, he noted. These had been whittled down to 11, all of which were in the Moon's mid-latitudes (from 60 degrees south to 60 degrees north) on the nearside that faces Earth.

(In contrast, India's Chandrayaan-2 mission planners would like to land near the lunar poles where water ice could have accumulated.)

South Korea proposed an analytical instrument that could be carried on Japan's Selene-2 rover, said Kyeong Ja Kim of the Korea Institute of Geosciences and Mineral Resources. The country also had aspirations of launching an orbiter-lander mission to the Moon around 2023.

China plans to bring lunar soil and rock samples back to Earth for analysis. Some reports suggest that Chang'e-5 could be launched around 2017. Japan too is considering a follow-on sample-return mission, according to Dr. Okada. The Selene-3 launch could take place in the early 2020s, he told reporters.

China has begun examining the possibilities of sending its astronauts to the Moon.

But no firm plans have yet been made and the goal of its human spaceflight programme remains the establishment of a- large space station about a decade from now. If Japan sent astronauts to the Moon, it would be in close cooperation with the U.S., as was done in the case of the International Space Station, said Dr. Okada.

Computer, electrical engg top choice at IIT-B

Bhavya Dore
bhavya.dore@hindustantimes.com

MUMBAI: Getting into the Indian Institute of Technology (IIT) for the most popular branches got tougher this year, with more toppers choosing the four-year BTech degrees in computer science and electrical engineering at IIT-Bombay.

The list for the computer science branch at IIT-B ended with the all India rank 75, while the list for electrical engineering ended with all India rank 91. Last year, the computer science course closed at rank 93, while electrical engineering closed with rank 106. A higher closing rank for a stream means that more top rankers have opted for it.

Candidates are allotted seats based on their preferences as well as their position on the merit list. Allotments ended with the fourth round of allotments on Wednesday.

THE RANK AT WHICH THE ALLOTMENT CLOSED

COURSE (BTech)	2009	2010	2011	2012
Aerospace	1256	1480	1295	1719
Chemical	928	872	937	1107
Civil	1413	1474	1359	1609
Computer science	86	116	93	75
Electrical	109	98	106	91
Engineering Physics	1171	1002	994	987
Mechanical	494	471	385	456
Metallurgical	2056	1961	2047	2138

"I picked computers because there are more research opportunities abroad. Over the years, computer science at IIT-B has become the standard choice among toppers," said Devdeep Ray, 18, who had an all India rank of 13 and will begin the new term at IIT-B next week.

Graduates from the computer science and electrical engineering branches usually get the best job offers at the end of their programmes, with annual salary packages often crossing Rs60 lakh per annum. "For both these courses, students seem to be going by rank and market forces," said an IIT professor.

The closing rank for mechanical engineering has fluctuated over four years but closed again within the top 500, with the closing rank for engineering physics showing steady improvement over the same period and closing within the top 1,000.

In contrast, popularity of branches such as aerospace engineering, chemical engineering and metallurgical engineering at IIT-B has dipped in the past few years. "Choice of course is related to how students perceive certain areas," said IIT-Kanpur professor Dheeraj Sanghi. He conducted a comparative analysis for all 15 IITs and multiple subjects over an eight-year period from 2003 to 2010 tracing both short term and long term trends in incoming student preferences.

This year's data also re-emphasised that IIT-B has entrenched its position as the most favoured IIT, with the highest closing ranks across all the major four-year programme branches.

Publication: The Times Of India Delhi;Date: Jul 16, 2012;Section: Education Times;Page: 37;

Role of libraries in academics

Aaditi Isaac/TNN

Stressing on the role that libraries and library-sources can play in fostering academic and research excellence in the Indian universities, a seminar was organised by the Information & Library Network Centre (INFLIBNET), an Inter-University Centre (IUC) under the University Grants Commission, India. "Traditionally, libraries and library sources have been important but have been invisible globally. The role of libraries in a technology-driven world has changed. Technology has brought about a revolution in terms of sharing resources and we must make use of it for the benefit of students and faculty," says Jagdish Arora, director, Information and Library Network Centre, an autonomous inter-university centre of UGC.

> Technology has brought about a revolution in terms of sharing resources and we must make use of it

In India, universities, which have funds, update their libraries through e-books, online journals, etc. What about universities which do not have funds? "The UGC infonet digital library consortium provides access to 7,500 journals in about 200 universities, which are funded by UGC. The universities that run all kinds of programmes, get access to all journals. We follow a model that allows us to get access to quality material that can be given out to the member-colleges. We have opened another gate for universities, not part of the forum. They can get their own subscriptions at the rate the other 200 universities pay and access quality material for five years. We are giving them access to the market, which they cannot afford," says Arora.

Talking about the challenges that are faced by Indian universities, Arora says that infrastructure is the biggest hurdle. "We can give universities cables but how they use it, is up to them. Connectivity is something we have to work on harder."

Paula Kaufman, dean of libraries and university librarian, University of Illinois Urbana-Champaign says that there is a need to look at a sustainable model for the growth of a library that will be beneficial to users.

"The value of a library is different from one institution to the other. It is a challenge to get funds to upgrade the library and the resources within but unless we do that, we cannot measure the impact the library resources are creating for the users."

"The model that we follow, measures things such as growth of e-books, cost per-use, etc. This allows us to keep track of what resources are being used and what resources are needed and what aren't. Use of resources in our university is not just restricted to students coming to the library physically and reading. With technology, students access material from outside the campus through the internet. This is a positive development because it has changed the way we offer library services," she says.

Publication: The Times Of India Delhi;Date: Jul 16, 2012;Section: Education Times;Page: 36

MATHEMATICS THROUGH TECHNOLOGY

The Ramanujan Foundation for Initiatives in Mathematics Education (RFIME) recently organised a conference in the Capital for mathematics teachers, titled Enabling Mathematics Learning through Technology. The conference was inaugurated by Vineet Joshi, chairman, Central Board of Secondary Education (CBSE). The inaugural function was facilitated by Shayama Chona, chairperson RFIME. Jonaki B Ghosh, the conference convener, introduced the theme of the conference by emphasising the role of technology in making mathematics learning meaningful. Eminent mathematicians such as R Ramanujam, Institute of Mathematical Sciences Chennai; Shailesh Shirali, Community Math Centre, Rishi Valley School and Inder K Rana, IIT Powai, Mumbai, were the plenary speakers of the conference and delivered talks on various aspects related to mathematics education and the use of technology in teaching mathematics. While Ramanujam talked about 'Mapping the School Mathematics Curriculum' that focused on the logical and pedagogical structure of the curriculum, Shailesh Shirali talked about the role of technology in facilitating experimentation and discovery in the mathematics classroom. Rana spoke about making mathematics learning more relevant through real-world problems. The conference also deliberated on various issues related to integration of technology in mathematics instruction and provided participants with hands-on experience in using some technology tools for teaching mathematics. 120 teachers from schools across Delhi and NCR participated in the conference.