

# Newspaper Clips

October 5, 2011

Times of India ND 5/10/2011 P-13

## Rot starts at top: Indicted IIT chiefs go scot-free

Akshaya Mukul | TNN

**New Delhi:** Poor quality of engineers is not the only problem afflicting the IITs. The rot has set in from the top. At least two of its directors — Damodar Acharya of IIT-Kharagpur and A K Bhowmick of IIT-Patna — are still in office, despite the Central Bureau of Investigation's indictment in the past.

The HRD ministry appointed Bhowmick as director knowing fully well that the CBI in 2008 had recommended penalty against him. Bhowmick was the professor of rubber technology centre in IIT-Kharagpur and the then dean of Sponsored Research and Industrial Consultancy Centre (SRIC), when the action was recommended against him.

The CBI found Acharya's involvement in the All India Council for Technical Education (AICTE) scam in May. Acharya was the AICTE's chairperson before taking over as director of IIT-Kharagpur. Though the agency recommended regular departmental action against Acharya in May, the ministry has been delaying the action.

Bhowmick was involved in what is popularly known as the Coalnet project. In its report, the CBI had stated that Bhowmick, as dean of SRIC accepted the work order issued by the Coal India Limited (CIL), which prohibited outsourcing without the CIL's approval. "Still he outsourced the entire job to another firm and thus violated



Prof Damodar Acharya

the condition of work order," the CBI report said. The agency had also recommended penalty against two other IIT-Kharagpur professors — R N Banerjee and P P Chakraborti — for their involvement in the Coalnet project.

Acharya even wrote to B Muthuraman, chairperson, board of governors of IIT-Kharagpur, seeking approval to initiate departmental proceedings against Bhowmick, Banerjee and Chakraborti, but nothing came out of it. In 2009, Bhowmick was made the director of IIT-Patna, despite CBI's indictment.

Even the CAG pointed out the Coalnet project's failure. CAG said that as per the work order, under phase I, out of 117 modules, only 21 modules were implemented. Despite this, Rs 6.55 crore was paid to the institute against a total contracted amount of Rs 8.95 crore for phase I. The audit body said out of 10 modules to be installed in 36 areas of different subsidiaries under phase II, only a single one was implemented even though Rs 4.11 crore was paid to IIT-Kharagpur. Coalnet remained stillborn even after an expenditure of Rs 39.58 crore.

### 'NRN's choice of words could have been gentler'

TIMES NEWS NETWORK

**New Delhi:** A day after Infosys chairman emeritus N R Narayana Murthy's remark on the falling standard of students in IITs, author and ex-IITian Chetan Bhagat said, "I agree with what he said. But Mr Murthy's choice of words could have been gentler. Such tough words can dishearten students. IIT students today are working as hard as in the past. To get judged like that is a little harsh. He should suggest improvements rather than condemn."

Interestingly, both Infosys founder Narayana Murthy and his immediate successor as its CEO, Nandan Nilekani, are former IIT students.

On October 3, while addressing a gathering of hundreds of former IITians in New York, Murthy had said, "Thanks to the coaching classes today, the quality of students entering IITs has gone lower and lower."

He had also said that apart from the top 20% of students who crack the tough IIT entrance examination and can "stand among the best anywhere in the world," the quality of the remaining 80% of students leaves much to be desired.

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# Murthy runs a body shop, tweets Bhagat

TIMES NEW NETWORK

New Delhi: Bestselling author and ex-IITian Chetan Bhagat has offered a sharp counterpunch to Infosys chairman emeritus N R Narayana Murthy's remark that the standard of students in IITs is declining.

"It is ironic when someone who runs a body-shopping company and calls it hi-tech, makes sweeping comments on the quality of IIT students,"

► **'Choice of words harsh', P 13**

the author of 'Five Point Someone', a book set in an IIT, wrote on Twitter on Tuesday.

He further tweeted, "Mr Murthy had a point, but wish he wasn't so sweepingly high-

“It is ironic when someone who runs a body-shopping company and calls it hi-tech, makes sweeping comments on the quality of IIT students

**CHETAN BHAGAT**



handed. Fix the system. No point judging students." He further added, "IITians have made a great contribution in making Infosys what it is. Hope people remember that."

Business Standard ND 05-Oct-11 P3

# Murthy sparks debate on IIT student quality

KALPANA PATHAK  
Mumbai, 4 October

THE Indian Institutes of Technology (IITs) and IIT-JEE coaching institutes have not taken kindly to Infosys Technologies founder, N R Narayana Murthy's comment that questioned the quality of students at these institutions.

A couple of days earlier, Murthy said during his keynote address at the Pan IIT Summit in New York: "Thanks to coaching classes, the quality of students entering IITs has gone lower and lower. Save the top 20 per cent who crack the tough IIT entrance exam and can stand among the best anywhere in the world, the quality of the remaining 80 per cent of students leaves much to be desired."

Responded the Director of an IIT, who did not wish to be named: "This is not a scientific way of pronouncing judgments. There may be deficiencies in our system. Over the years, IITs have adopted objective-type questions in the paper, and there is some

visible effect of that. But to comment that 80 per cent of students lack quality is not called for without doing optimum research. Specially with personalities like Narayana Murthy whose words count a lot, it should be based on thorough research."

Said a professor from IIT, Delhi: "People are shooting missiles on IITs. We are too much into the public gaze and it's high time we are given some benign neglect, so that we can concentrate on our jobs."

Nor did Murthy's comments go down well with IIT entrance coaching classes. "I disagree with Mr Murthy. If any deterioration has happened, blame it on the examination system. What it used to be in the 80s and 90s has changed. Now they have begun asking objective-type questions, which anyone can solve. It gives a chance to more students to clear the tests. If they talk about quality, they should restore the earlier examination pattern," said Pramod Maheshwari, Di-

rector and CEO of Career Point Infosystems, a Kota-based IIT-JEE (Joint Entrance Examination) training institute.

Earlier, said Maheshwari, only 2,000 students used to go to IITs in a year; today around 10,000 seats available in the IIT system. Around 450,000 students take the IIT-JEE. Of these, around 13,000 are shortlisted.

"What Mr Murthy is comparing needs to be understood from a data point of view. Coaching institutes are giving students exposure to a set of questions in the IIT-JEE. Coaching institutes teach physics, chemistry and maths to students, explaining fundamentals to them which students use in the examination to solve questions. Mr Murthy's comments are not true," added Maheshwari.

C V Kalyan Kumar, Director at FIITJEE, said the need of the hour is to standardise the education system, so that what is taught at schools is at par with what is asked in the IIT entrance tests.

**Asian Age, ND 05/10/2011 P-6**

# Save the IITs

**T**he Indian Institutes of Technology are the jewels of India's education sector. They have long been centres of excellence, turning out bright engineers who have found recognition and fame the world over. But when N.R. Narayana Murthy says the sheen of these institutes is fading, it's time to take it seriously. The founder of India's most respected IT firm is himself an IIT alumnus and he strongly feels that the quality of students entering the institutes, and presumably graduating from there too, is very poor.

The selection criteria for entrants are based on competitive examinations and many coaching classes around the country have sprung up to teach ways to ace these tests. The time may have come to introduce a multi-layered selection process that goes beyond just the examination results, which tend to favour those with sharp memory skills and little else in their favour. As it is the Indian education system, at the primary, secondary and tertiary levels, is geared towards rote learning rather than imaginative cognitive development. Specialised institutes of higher learning like the IITs must now restructure their intake process to get better quality students.

Yet, any change will have to be calibrated. Mere rejection of the existing joint entrance examination system would be a mistake. The IITs are still among the toughest institutions to get into and those who make it are not all mediocre. The trick would be to come up with a system that is more in tune with the needs of today's globalised economy. Today's graduate cannot just be a problem solver who can tackle exams with ease; s/he has to be a much more rounded personality.

## DETERIORATING STANDARD OF IIT STUDENTS

# Murthy's Comment Stirs Up Debate Among Academicians

**DEVINA SENGUPTA  
& SAUMYA BHATTACHARYA**  
BANGALORE | NEW DELHI

Are coaching institutes to blame for poor quality of IIT students? Somewhat, says the industry, but blames other factors, like education system, too.

An entry into the coveted Indian Institutes of Technology got a snub on Monday from the Infosys chairman emeritus NR Narayana Murthy. He said at a 'Pan IIT' summit in New York that the quality of students entering IITs has deteriorated over the years due to coaching classes that prepare engineering aspirants.

**Murthy's issue is perhaps about expectations. Even today IITs will probably be producing best in class, but are they at the same level as earlier?**

**SOM MITTAL**  
President, Nasscom

**Our students are capable enough. Those who set the questions should be questioned as to why they did not set a paper that will bring in the best. IIT professors should then be blamed and not coaching institutes**

**ANAND KUMAR**  
Founder member, Super 30

The quality of students and their employability has been a cause of concern for the industry. "There has not been any change in the quality of students either for the better or worse. The same hiring and selection process is applied for all engineering colleges and the IIT students do not need any lesser time for training compared to a non-IITian and after training productivity is same as others," says Manjunath SR, senior director, human resources, NetApp India,

The company takes 50-60 students from IITs every year and has been doing this for the past four years.

Ganesh Shermom, People Practice Head for KPMG, has seen a drop in the quality because now students are tested for admissions only on 2-3 subjects and on questions that can be cracked through sheer practice.

Som Mittal, an IITian and Nasscom president, says, "Murthy's issue is perhaps about expectations. Even today IITs will probably be producing best in class, but are they at the same level as earlier?"

Over the years both in terms of size and volume, IITs have expanded. The standards at IITs are very high. JEE was a great filter, but is today dominated by the coaching classes. "This is not criticism, but a time to look at what we need to do to maintain the standards in the future," Mittal adds.

Some like Dhananjay Bansod, chief people officer of Deloitte, blame the education system. "I empathise with Murthy on the coaching bit, but the fault lies with the entire education system. Our education system is far slower to change compared to changing industry needs," says Bansod. Deloitte visits all top IITs including Delhi, Kanpur, Bombay and Madras for campus recruitment. The fault, according to him, lies in the selection process that tests quantitative skills. "You need both quantitative and qualitative skills to make it work at the workplace," he says.

Every year more than half-a-million students sit for joint entrance examination for admission to IITs and only 10,000 get into IITs.

IIT Kanpur Director Sanjay Dhande agrees things are amiss. "The IIT education model has to get more liberalised and the curriculum needs to get revised but in education the changes are slow. The core courses have to be far more liberal than what we are doing right now and it has to be more broad-based like a major and a minor subject all together," he says.

The need to overhaul the admission process has already been announced and there is a task force a

that will be looking to include the consistency in school boards examinations and have an aptitude test as well, says IIT Madras Director Bhaskar Ramamurthi. There has been a tendency to ignore school board results that includes languages which will be changed.

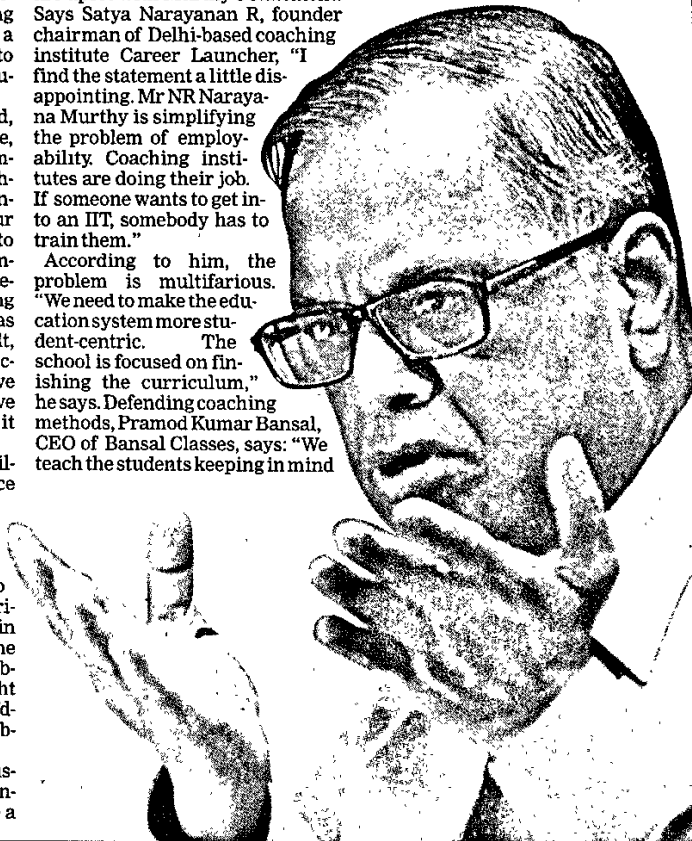
S Sadagopan, founder director of IIIT, Bangalore, vouches for lack of enthusiasm among the students. "Coaching starts when students are in class 9. By the time students make it to the IIT, their enthusiasm goes down. There has to be more imaginative scheme for admission than just a score."

Coaching institutes, for their part, are upset with Murthy's statement. Says Satya Narayanan R, founder chairman of Delhi-based coaching institute Career Launcher, "I find the statement a little disappointing. Mr NR Narayana Murthy is simplifying the problem of employability. Coaching institutes are doing their job. If someone wants to get into an IIT, somebody has to train them."

According to him, the problem is multifarious. "We need to make the education system more student-centric. The school is focused on finishing the curriculum," he says. Defending coaching methods, Pramod Kumar Bansal, CEO of Bansal Classes, says: "We teach the students keeping in mind

the vast IIT syllabus. Coaching centres help students understand the routine and give them a systematic approach to crack the exams." The institute is training 14,000 students for JEE in Kota and Jaipur.

Anand Kumar, Founder member of Super 30, an institute in Bihar that has had a success rate of 80% to 100% in terms of its students clearing the exam, blames professors. "Our students are capable enough. Those who set the questions should be questioned as to why they did not set a paper that will bring in the best. IIT professors should then be blamed and not coaching institutes," says Kumar.



Mint ND 05/10/2011 P7

QUESTIONING STANDARDS

# Fading interest in engineering, entrance test blamed for IIT slide

**50% of the students selected are not interested in a career in engineering, says IIT-Guwahati director**

By Prashant K. Nanda & Jacob P. Koshy

NEW DELHI

A day after Infosys Ltd chairman emeritus N.R. Narayana Murthy rued the quality of students at the Indian Institutes of Technology (IITs), experts and IIT officials said coaching centres that help students enter these elite engineering colleges are only partly to blame.

The entrance examination, inadequate training in high schools and falling interest among students to pursue careers in engineering must also share the blame, they said.

Addressing a global IIT alumni meet in New York, Murthy said on Monday that most IIT students now fare poorly in jobs and global institutions of higher education. Test preparation centres, he said, are to be blamed for creating a pool of rote learners who enter the IITs.

"Thanks to the coaching classes today, the quality of students entering IITs has gone lower and lower," Murthy said, advocating a change in selection criteria, as reported by PTI.

The IIT-joint entrance ex-



**Entry level:** The main building of IIT-Kharagpur. IIT's multiple-choice entrance test format has been criticised by experts.

amination (JEE) is one of the most competitive in the country, with just about two out of every 100 candidates finding a seat at one of the 15 IITs. In the last academic year, 475,000 students took the test, vying for around 10,000 seats.

Many successful candidates rely on private coaching centres to perform well at the examination. Students at these centres are trained through a combination of rote-learning and calculated guess work to score the maximum in a limited time.

For the last eight years, the IITs have chosen a multiple-

choice format for the JEE, compared with an earlier version which tested students' in-depth subject knowledge.

"The drop in quality intake at the IITs can be attributed to its selection process," said C.V. Kalyan Kumar, director of FIITJEE Ltd, a prominent chain of tutorials. "Earlier, the selection process was subjective, but in the last eight years, it has gone completely objective."

One correct answer, according to Kumar, fetches three marks, while a wrong answer leads to one negative mark. "This means students don't

hesitate to guess answers. By guessing, you can get 25% right answers," he said.

The need of coaching centres arises mainly due to poor schooling, but the "government is not strengthening that because it is difficult. If you select students based only on school boards, then the quality will go down further as some boards grant marks without judging the (student's) calibre," Kumar said.

Vishal Chandra, an IIT-Delhi graduate who heads a start-up, said the current examination only required students to have a limited understanding of physics, chemistry and mathematics. "You don't need to understand these subjects in great depth. Tutorials prepare you to tackle these formats."

He, however, added that the IIT-JEE tutorial he attended taught him science better than his school.

Rajiv Kumar, a professor at IIT-Kharagpur, said he agreed with Murthy.

"But you cannot only blame coaching centres for the mess. IITs have to put their house in order first before blaming anybody else. The exam is yours and the selection process is yours too," said Kumar, who was suspended five months ago for criticizing the IIT system by using the Right to Information Act. He has filed a public interest litigation asking for reform in the IIT system.

Gautam Barua, director of IIT-Guwahati, said Murthy was

only partly right on the quality of students. "It's a concern that at least 50% of the students are not interested in pursuing a career in engineering courses offered by IITs. They are good students interested in some other fields. They come to IITs for a good brand name, great peers and it helps them crack exams like CAT (common admission test for the Indian Institutes of Management)."

The 2010-12 batch of IIM-Bangalore's flagship postgraduate programme has 375 students, of which 20% are IIT graduates.

But Ashok Gupta, dean of alumni affairs and international programme at IIT-Delhi, said neither the IIT brand name nor the quality of its students has gone down. "People should check ground realities," he said.

Gupta said it has always been true that the top 20% of students are excellent, 60% are very good and the rest are average.

"India's market situation has changed," he added. "Earlier, the top 15-20% IIT pass-outs used to go out to the US and other countries, either for jobs or further studies. Now they get quality local jobs. So those who are going abroad may be average students."

Gupta also said students cannot be blamed for choosing careers in management if they pay better.

But Murthy is not the first to criticise the IITs or the impact of coaching centres.

On 14 September, the human resource development ministry and the IIT Council said in a note that they were considering reforms in the entrance exam and that coaching centres were "playing havoc with the quality of student intake."

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Hindustan Times ND 05/10/2011

P-10

# Campus fiction

Narayana Murthy is right. Most IIT graduates aren't as hallowed beings as the myth suggests

We haven't said it.

NR Narayana Murthy has.

According to Infosys chair-

**thepundit**

man emeritus and Indian Institute of Technology (IIT) Kanpur old boy NR Narayana Murthy, an overwhelming proportion of engineers who pass out of IITs are not good enough to play ball in the big, fast world out there. We — none of us IIT graduates, some of us IIT entrance exam try-outs and rejects — don't want to come across looking as pleased as Nandan Nilekani after he's punched in the last unique identity. But the fact is our silent complaint has always been that those who get into IITs aren't all Silicon Valley hotshots and that's *not* because of a demand shortage. They simply don't make the grade. For confirmation, check those who buy Chetan Bhagat books.

Mr Murthy has rightly targeted the infamous 'coaching centres', essentially cramming joints where youngsters dreaming only of 'getting into IIT' are taught to jump the hoops of IIT entrance exams. Speaking in New York at a pan-IIT summit, he also spoke about how entrance tests should be geared at gauging independent thinking abilities rather than problem solving. In fashion industry terms, the IITs are perilously churning out tailors not designers, whatever the myth may be.

For the majority of IIT-minded youngsters, 'getting into IIT' is less about acquiring knowledge than about reaching an educational status that by itself is good enough. After all, an IIT graduate (or even a drop-out) will not only, by dint of cracking the entrance exam, be more than eligible in a job but also fetch a premium price in the marriage market. All at the cost of the IIT brand with the result of genuine post-IIT talent moving elsewhere. Which should make it obvious why, in all humility and with stunning hindsight, we are glad we didn't make it to IIT. We were simply not good enough and got the message.

Hindu ND 5/10/2011 p-10

## **IIT students**

This refers to the report "Poor quality students entering IITs: Murthy" (Oct. 4), where Infosys chairman emeritus N.R. Narayana Murthy has voiced his displeasure over the quality of engineers who pass out. There has been a dilution in quality due to various reasons — one of it has to do with the increase in the number of IITs without teaching staff of the required calibre. Coaching classes, another reason given by Mr. Murthy, I am sure have never claimed to be institutes of all-round development for aspiring students. Let us not deride our engineers. We need to have a long-term plan to improve to world-class levels the selection of students as well as the quality of education in the IITs and other premier institutes of learning in India. Perhaps, the Nalanda University, an exciting new project, will have the answers.

**A. Mohan,**  
*Chennai*



Times of India Ahmedabad 04.10.11, p-4

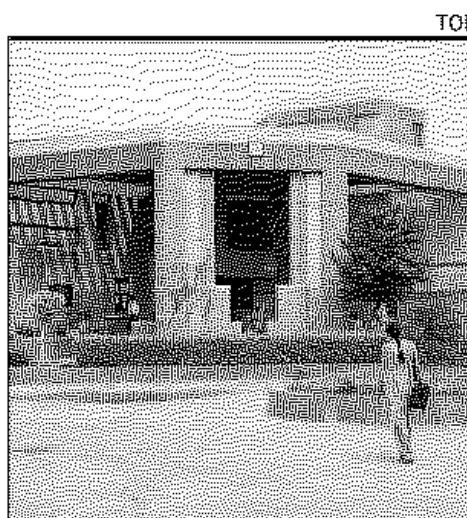
# IIT-GN to help foreign students understand country's identity

Dayananda Yumlembam | TNN

**Ahmedabad:** Thousands of foreign tourists visiting India every year experience the country in their own style. Many could have possibly gone through bad experiences and returned with wrong impressions of the country's diverse cultures and traditions.

Taking a step away from such a tourist cliché, Indian Institute of Technology Gandhinagar (IIT-GN) will now host a programme to immerse visiting foreign students into the culture and traditions of the country, coordinated by faculties of IIT-GN Rita Kothari and Jaison Manjaly, the ten day programme has been designed to help overseas students relate to the many layers of the country's identity.

The first batch of the programme that will take off on December 21 will have 11 students of California Institute of Technology (Caltech) par-



ticipating. The module will include discussion on the country's economic trends, culture and history, poetry, films, structures of caste and community and enable the participants to appreciate the country's multifaceted identities.

"Through a combination of academic lectures and field visits, the module will take the students through India of the past, present and the future. By helping the students relate to the country's traditions of philosophy, science and tech-

nology to a present-day India, the programme will help them identify continuities as well as shifts that the country has made through the centuries," said Kothari.

The institute perceives its location near Ahmedabad as an added advantage for hosting such a programme. Ahmedabad's 600-year-old history which is responding rapidly to modernity and globalization, that the city was chosen by Mahatma Gandhi as the centre of his political campaigns and social experiments, its long-standing tradition of business and entrepreneurship and rich architecture will all become points to ponder on for participants. "Ahmedabad city will provide to the participants an unhurried view of a city that has something of the old as it embraces the new, a simultaneous view of the regional and the national," said Kothari.

# Hindustan Times ND 05/10/2011

## HTEducation P-1

# Log on to engineering

## Will candidates find it tough to cope if India's most important engineering examinations go online?

**Garima Upadhyay**

Like most science students, Gargi, studying in Class 12 in a premier Delhi school, is worried. Pressure to fare well in the board and bagging a seat in an engineering college are her most pressing concerns right now. Also, the choice she has to make between the online/written medium to opt for AIEEE is giving her sleepless nights. "It is extremely difficult for me to decide on the mode of examination for AIEEE. Though BITSAT (Birla Institute of Technology and Science admission test) is online, and I am sitting for it I am not sure if I should take the risk of giving AIEEE in the online mode."

With the engineering exam season looming large on the horizon, it is essential for the students to understand the structure of the exam and plan their strategy accordingly. The notification for JEE is out and there is no change in the structure of the examination. The AIEEE notification is expected soon.

"The online option is available to test-takers in 22

cities. The online medium would make it convenient for many students who couldn't take the exam before due to geographical constraints. Students should familiarise themselves with the online mechanism before the exam, says Harsh Tiwari, public relations executive, Delhi Technological University.

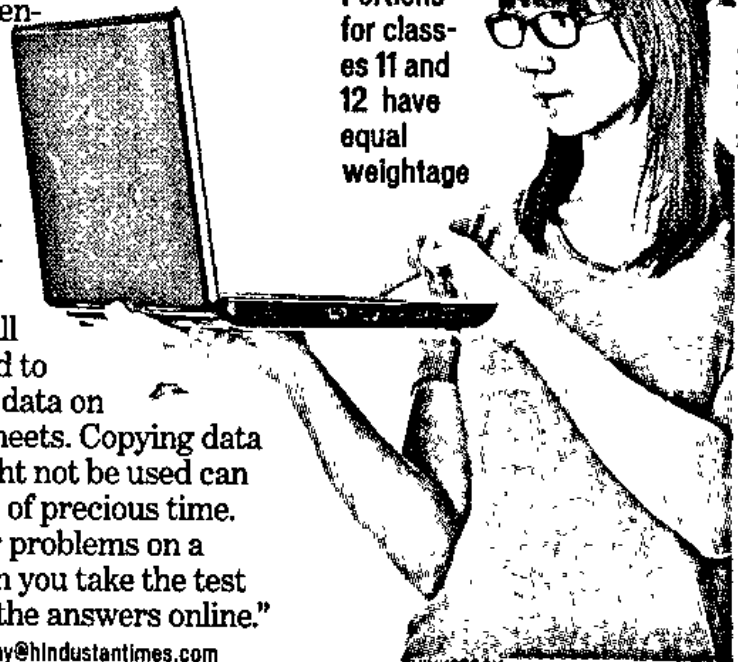
Ajay Antony, course director IIT-JEE and AIEEE, TIME, says, "Students must try out online examinations provided by a good content provider. Select the test series carefully. The transition from paper to pencil to the online format is not just a structural one. In the online version, the student will be tempted to copy valid data on working sheets. Copying data which might not be used can be a waste of precious time. Solve your problems on a sheet when you take the test and write the answers online."

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### TIPS ON THE ONLINE EXAM

The content is the same. The students need to familiarise themselves with the process of going back and forth with marked questions for the last segment marking. The coding system will need to be perfected for online exams and should be practiced for all model test papers. The revision and last six-month preparation strategy will not differ.

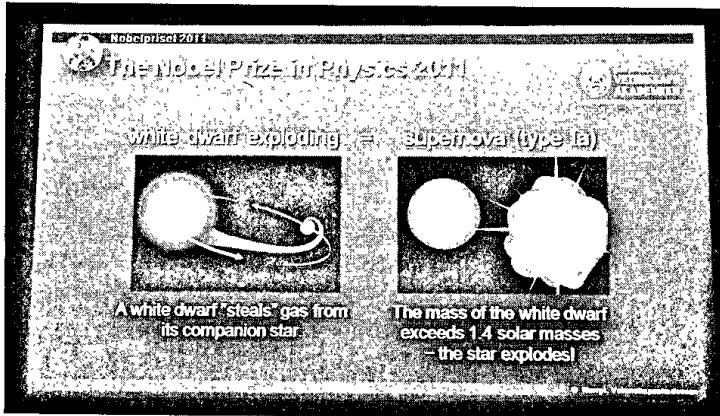
Start going through Class 11 portions. Portions for classes 11 and 12 have equal weightage



THINKSTOCK

Hindu ND 5/10/2011

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**NEW LIGHT ON EXPANSION:** An image is projected at a screen as members of the Swedish Royal Academy of Sciences in Stockholm announce on Tuesday that Saul Perlmutter, Adam Reiss and Brian Schmidt have jointly won the 2011 Nobel Prize in Physics. An undated picture shows Saul Perlmutter, one of the three winners of the 2011 Nobel Physics prize on Tuesday. — PHOTOS: AFP

# Nobel winners sweep away cosy view of Universe

## Use ancient stars that flare in dramatic death throes to measure distance

**PARIS:** What if the Universe was silently ripping apart?

What if, instead of ending in a bang or a whimper, it did neither, and just expanded on and on, flying apart in a limbo of deep chill and disconnected atoms?

This is the implication — as revolutionary as it is scary — of the insights that on Tuesday earned three astronomers the Nobel Physics Prize.

Saul Perlmutter and Adam Riess of the United States and U.S.-Australian Brian Schmidt won the paramount award for using ancient stars that flare in dramatic death throes to measure distance on a cosmic scale.

These so-called type Ia supernovae were used by their teams as “standard candles”

whose distance could be measured, like beacons in the night.

Working in competing groups, the Supernova Cosmology Project and High-z Supernova Search Team looked at the “redshift” from these ultra-bright stars.

Redshift is a measurement of a star’s redness in the light spectrum. The farther the distance, the more the wavelength stretches deeper into the red zone, becoming a yardstick of how far light has travelled.

The technique entailed looking at the sky just after the new Moon and again three weeks later, before moonlight obliterates the faint light of stars. The two images are then compared in

the hope of spotting a new dot of light that could be the flare of a distant supernova.

What the two teams had expected to find was a cosy redshift that would back theories that the Universe — set in motion by the Big Bang 14 billion years ago — was expanding, but at ever-slower speed.

### Surprising results

In 1998, the two rival groups put forward results that shook the very foundations of science. They found greater and greater redshift values from their “standard candles,” signalling the Universe’s expansion was not constant but accelerating.

The implication was clear: ultimately, the force of grav-

ity would no longer be enough to keep matter together. Instead, atoms would become more and more diluted in an ever larger, always colder and emptier space.

“We were frantically trying to sort out where we had gone wrong,” said Dr. Schmidt on Tuesday, as he recalled his team’s stunned initial response to the data.

“So it was with a fair bit of trepidation that we wound up telling our group that the Universe seems to be speeding up. We were hoping everyone would be nice to us. It seemed too crazy to be right. We were a little scared.”

The discovery “was a huge surprise at the time,” Roger Davies, said president of Britain’s Royal Astronomical So-

ciety, in an email to AFP. Astronomers rushed to confirm the findings, using powerful new telescopes and light-sensitive imaging sensors.

“The discovery led to the realisation that empty space exerts a pressure that pushes the galaxies apart — something that demands new physics and a new understanding of space-time,” said Mr. Davies.

What is driving this faster expansion?

Nobody knows for sure, but the finger is pointing at so-called dark energy, an enigmatic, outward-acting force.

Initially, dark energy was only a small part of the Universe, but some five or six billion years ago it took the

upper hand and now accounts for 75 per cent. Its dominance is transforming a slowing expansion of the Universe into an accelerating one, according to the latest theory.

“Ordinary” matter that we can see, sense and measure accounts for only five per cent of the Universe. The rest is “dark matter” which pushes as dark energy pulls.

“Even empty space contains energy and exerts a kind of ‘antigravity’ which causes cosmic expansion to accelerate,” Martin Rees, Britain’s Astronomer Royal, explained.

“It will be a long time before theorists understand this force. It is part of the bedrock nature of space and time.” — AFP

Hindu ND 5/10/2011 p-9

# PSLV-C18 to put four satellites in orbit

It will be launched from Sriharikota on October 12; two satellites built by students

T.S. Subramanian

**CHENNAI:** Preparations are on for the lift-off of the Polar Satellite Launch Vehicle (PSLV-C18) from the spaceport at Sriharikota at 11 a.m. on October 12.

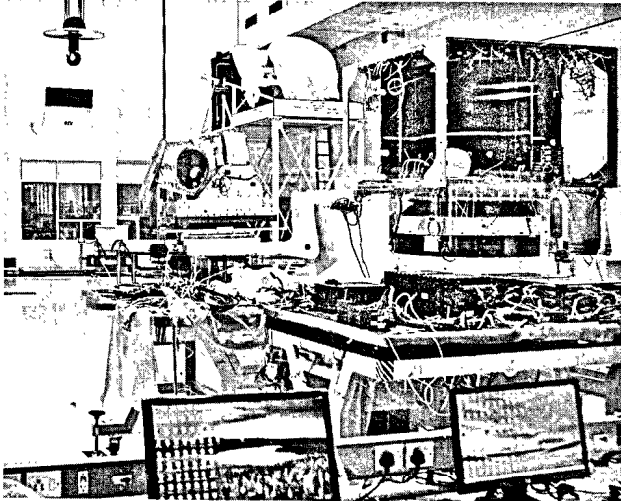
## Global tropical weather

The rocket will put four satellites in the orbit: Megha-Tropiques, built by India and France to understand global tropical weather and climate; SRM Sat, built by the students of SRM University, near Chennai; Jugnu, a satellite integrated by students of the Indian Institute of Technology (IIT), Kanpur; and VesselSat from Luxembourg.

The information sent by the instruments on board the Megha-Tropiques will help understand the behaviour of Indian monsoons and occurrence of cyclones, floods and droughts.

## Heat shield

The PSLV has been fully integrated, said K. Radhakrishnan, Chairman, Indian Space Research Organisation (ISRO), on Tuesday from Bangalore. "The Megha-Tropiques and the three co-passenger satellites have been fully integrated



*Megha-Tropiques being built in the ISRO Satellite Centre in Bangalore in June 2011. - PHOTO: K. BHAGYA PRAKASH*

with the vehicle. The heat-shield was closed last morning." The heat-shield around the satellites protects them from the intense heat during the launch and the vehicle's ascent into the atmosphere.

After the rocket reaches a certain altitude, the heat-shield falls off.

Dr. Radhakrishnan said the final checks were under way. "On October 8, we will have a launch rehearsal. The

vehicle readiness review will take place on October 9 followed by the Launch Authorisation Board meeting the same day itself. As of now, the launch is scheduled on October 12 at 11 a.m."

• **Megha-Tropiques will help understand the behaviour of Indian monsoons**

• **SRM Sat will study carbon-dioxide and carbon-monoxide in atmosphere**

The PSLV-C18 — which will be the 20th PSLV to be launched — is the core-alone version of the four-stage PSLV, without the strap-on booster motors that will put the four satellites in orbit.

Megha-Tropiques (Megha in Sanskrit means cloud and Tropiques in French is tropics) is one of the most advanced and complex satellites built to monitor the weather in the short-term and climate in the long-term in the tropical regions of the world. It is a joint project of ISRO and the French space agency, Centre National d'Etudes Spatiales (CNES).

## Thermal engine

ISRO officials said the 1,000-kg satellite had been built to investigate the tropical regions which received the maximum energy from the sun than they radiated back into space.

The excess energy received in the tropical region is used as a thermal engine

and provides circulation in the atmosphere and the oceans.

## 'Life cycle'

"The complex processes between solar radiation, water vapour, clouds, humidity, precipitation and atmospheric motion determine the life-cycle of convective systems and influence the Indian monsoon in the tropical region," the ISRO officials explained.

From its perch in the sky at an altitude of 867 km, the Megha-Tropiques would help study, on a sustained basis, the rapidly developing weather systems in the entire tropical world. Thus, the information beamed by the Megha-Tropiques will be useful not only to India but to all the countries in the Indian Ocean region and other parts of the world.

## Scientific payloads

The satellite has four scientific payloads. The Microwave Analysis and Detection

of Rain and Atmospheric Structures (MADRAS), built by ISRO and the CNES, will provide an estimation of rainfall, water vapour, liquid water, ice and surface wind. Scanner for Radiative Budget (SCARAB) will study the radiation received by the earth and reflected by it. The third instrument, Sondeur Atmospherique du Profil d'humidite Intertropicale par Radiometrie (SAPHIR) will investigate the humidity present in the tropical atmosphere.

The CNES has built the SCARAB and the SAPHIR. The GPS-ROS (Global Positioning System- Radio Occultation System) from Italy will study the temperature and humidity at different altitudes.

The ISRO Satellite Centre, Bangalore, integrated the entire satellite.

The 10-kg SRM Sat will help in understanding global warming and pollution by studying carbon-dioxide and carbon-monoxide present in the atmosphere. The three-kg Jugnu has a camera to take pictures of the earth to monitor, vegetation, reservoirs, lakes, and ponds. VesselSat will help in locating the ships in the sea-lanes of the world.

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# Lack of funds hampers social science research

Akshaya Mukul | TNN

**New Delhi:** The poor state of Indian Council of Social Science Research, the leading body that funds and promotes social science research in the country, brought out by the review committee recently has resulted in HRD ministry setting up a separate sub-group to decide on 12th Plan funding. It could, for the first time, begin targeted funding for ICSSR and social science research in the next plan.

ICSSR chairperson Sukhdeo Thorat's recent presentation to HRD minister Kapil Sibal on the roadmap for social science research in general and ICSSR in particular brings out the yawning gap between the minister's aspiration to step up research and the ground situation. "Even if emergency measures are taken, it would take at least another ten years for social science research in India to make an international presence," a senior ICSSR official said.

More than the review committee, ICSSR's own study brings out the real picture. Take the case of research projects. During the 11th Plan, ICSSR could sanction only 30% of research proposals. Out of the sanctioned



**GROUND REALITY**

ones, 12% required less than Rs 2 lakh and 65% between Rs 2 to 5 lakh. ICSSR admits that low funding affected quality.

ICSSR pointed out that out of 2.5 lakh teachers in social sciences, on an average 8,333 teachers require research grants. But it is so far being given to only 693 teachers leaving a deficit of 7,640.

ICSSR also found that half the teachers in social sciences were without M Phil and PhD, making it necessary that they be given fellowships. The picture is again very dismal. Against the current annual requirement of fellowship to 9,500 teachers, only 666 teachers are being supported. It needs to be pointed out that the bulk (661) of 666 fellow-

ships comes from UGC and only five per year from ICSSR.

A bigger deficit between demand and supply is seen in case of fellowship to students for M Phil/PhD. While the requirement is for 10,000 fellowships, only 2,055 is given out annually. Again the bulk of fellowships (2,000) is from UGC and only 55 from ICSSR.

Then there is the story of lack of international collaborations between Indian and foreign scholars and ICSSR failing to meet all demands from its meagre resources.

The overall story is that China has overtaken India in social science research. Considering that it is a late entrant, even Brazil is faring better in many respects. A recent study showed that India is on 13th rank among 26 countries with China placed on seventh rank and Brazil 21.

Between 1997 and 2007, China's share grew from .85% to 3.63% and India from .91% to 1.01%. India fell behind in terms of co-authored papers, the ration being 27.75% for Brazil, 15.18% for China and 14.96% for India. The most productive institutions in terms of scholarly work is from China and Brazil. From India only two universities – Delhi University and JNU – figure in the list.

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## Universe's expansion study wins physics Nobel

Stockholm: The "astounding" discovery that the expansion of the universe is speeding up won the Nobel physics prize on Tuesday for three astronomers whose observations of exploding stars transformed our view of the world, and of how it may end. Honouring two global teams of stargazers who shook cosmology to its foundations in 1998, the Nobel Committee said Americans Saul Perlmutter, Brian Schmidt and Adam Riess had shown how the universe that emerged from the Big Bang may fly apart so far, cooling as it goes, that it "will end in ice".

Their work gave birth to the theory of dark energy, a kind of inverse gravity, that causes the expansion to accelerate. Up to three quarters of the universe seems to comprise dark energy. Many hope an answer could reconcile apparent anomalies in physics. The teams studied dozens of exploding stars, or supernovae, expecting to confirm theories dating back to the 1920s that the universe has been expanding for 14 billion years since Big Bang but at an ever slower rate. **REUTERS**

# नवभारत टाइम्स

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## चेतन भगत ने किया नारायणमूर्ति पर वार

4 Oct 2011, 2106 hrs IST, एजेंसियाँ

**नई दिल्ली।।** मशहूर लेखक चेतन भगत ने इनफोसिस के चेयरमैन एमेरिटस एन.आर. नारायणमूर्ति को निशाने पर लिया है। उन्होंने नारायणमूर्ति के उस बयान का कड़ा विरोध किया है, जिसमें उन्होंने कहा था कि कोचिंग क्लासों के कारण आईआईटी ग्रैजुएट्स की क्वालिटी गिरी है।

चेतन भगत ने ट्वीट किया है, 'जो लोग बॉडी शॉपिंग (शॉर्ट टर्म के लिए आईटी प्रफेशनल को नौकरी देते हैं) कंपनी चलाते हैं और इसे हाई टेक कहते हैं, वे लोग आईआईटी की क्वालिटी पर कॉमेंट करते हैं।' उन्होंने ट्विटर पर लिखा है, 'इंफोसिस को बनाने में आईटीटी स्टूडेंट्स का बड़ा योगदान रहा है। मुझे लगता है नारायणमूर्ति को इसे नहीं भूलना चाहिए।'

गौरतलब है कि न्यू यॉर्क में इनफोसिस के चेयरमैन एमेरिटस एन.आर. नारायणमूर्ति ने पूर्व आईआईटी ग्रैजुएट्स के सम्मेलन कहा था कि कोचिंग क्लासों के कारण आईआईटी ग्रैजुएट्स की क्वालिटी बीते कुछ बरसों में गिरी है। उन्होंने कहा था, कोचिंग क्लास में सवाल के सीमित सेट ही पढ़ाए जाते हैं, जिनमें से कुछ एंट्रेंस एग्जाम्स में पूछे जाते हैं। इस तरह स्टूडेंट्स आईआईटी में आ तो जाते हैं, लेकिन जॉब और यूएस के हायर एजुकेशन इंस्टिट्यूट्स में उनकी परफॉर्मेंस अच्छी नहीं होती। 20 फीसदी ही सर्वश्रेष्ठ में शामिल हो पाते हैं। ऐसे में आईआईटी एंट्रेंस का नया तरीका खोजना होगा, जिससे आईआईटी 10-20 बरसों में हार्वर्ड और एमआईटी जैसे रिसर्च इंस्टिट्यूट बन सकें। आईआईटी में फेकल्टी का अपॉइंटमेंट 5 साल के कॉन्ट्रैक्ट पर होना चाहिए।

### IIआईआईटी छात्रों के स्तर पर नारायणमूर्ति का बयान अनुचित'

आईआईटी के एंट्रेंस एग्जाम की तैयारी कराने के लिए चर्चित स्थान 'सुपर 30' के संस्थापक आनंद कुमार ने अमेरिका में इनफोसिस के नारायणमूर्ति के इस बयान को अनुचित ठहराया है कि आईआईटी के छात्रों का स्तर ठीक नहीं है।

आनंद ने कहा कि नारायणमूर्ति का कहना है कि आज के समय में आईआईटी में एडमिशन लेने वाले अंग्रेजी नहीं बोल पाते। सच तो यह है कि देश के सरकारी स्कूलों में अंग्रेजी का स्तर काफी नीचे है और गांवों में अंग्रेजी का प्रचलन नहीं है, जिस कारण बच्चे अंग्रेजी नहीं बोल पाते। इसका मतलब यह नहीं कि वे योग्य नहीं हैं।

आनंद कहते हैं कि आईआईटी में जाने के बाद इन बच्चों की अंग्रेजी मजबूत की जा सकती है। उन्होंने कहा कि आईआईटी की परीक्षा के लिए कोई पैटर्न तय नहीं है और न ही इनकी परीक्षा ज्ञान पर आधारित होती है। वह कहते हैं कि आज के समय में आईआईटी की परीक्षा और 12वीं के सिलेबस में बहुत बड़ा अंतर है। यही वजह है कि छात्रों को कोचिंग संस्थान का सहारा लेना पड़ता है।

उन्होंने कहा कि आज जरूरत है कि आईआईटी की विषय-वस्तु को रुचिकर और रिसर्चयोग्य बनाया जाए। आनंद का मानना है कि आज आईआईटी में जाने वाले छात्रों में विद्वता की कमी नहीं है। आईआईटी के प्रोफेसर्स को केवल नौकरी के लिए नहीं पढ़ाना चाहिए, बल्कि छात्रों की नॉलेज बढ़ानी चाहिए।

## प्रतिभा की कसौटी पर आईआईटी

**आ**मिर खान की चर्चित फिल्म *श्री इंडियट* का एक संवाद खूब मशहूर है- काबिल बनो, कामयाबी खुद तुम्हारे पीछे भागेगी। परोक्ष रूप से अब यह मुद्दा अग्रणी सॉफ्टवेयर कंपनी इंफोसिस के मानद चेयरमैन एन आर नारायण मूर्ति ने उठाया है। उनका कहना है कि देश में इंजीनियरिंग शिक्षा के क्षेत्र में सबसे प्रतिष्ठित अखिल भारतीय प्रौद्योगिकी संस्थानों (आईआईटी) में प्रवेश पानेवाले छात्रों का स्तर लगातार गिर रहा है, नतीजतन वे नौकरी और वैश्विक स्तर के संस्थानों में उच्च शिक्षा के मामले में फिसड्डी साबित हो रहे हैं। नारायण मूर्ति ने इसके लिए मौजूदा प्रवेश परीक्षा प्रणाली और कोचिंग संस्थानों को जिम्मेदार ठहराया है। साठ साल पहले जब खड़गपुर में देश के पहले अखिल भारतीय प्रौद्योगिक संस्थान की नींव रखी गई थी, तब प्रथम प्रधानमंत्री पंडित जवाहरलाल नेहरू ने कहा था कि यह संस्थान आधुनिक भारत की बुनियाद रखेंगे। आईआईटी ने इसके बाद कामयाबी के झंडे भी गाड़े और दुनियाभर में अपनी काबिलियत भी साबित की। सिलिकॉन वैली इसकी सबसे बड़ी मिसाल है। खुद नारायण मूर्ति ने अपनी

**आईआईटी के स्तर पर उठते सवालों के मद्देनजर इसमें आमूलचूल सुधार की सख्त जरूरत है।**

उच्च डिग्री आईआईटी, कानपुर से हासिल की थी। लेकिन यह भी एक सच है कि आईआईटी की गिनती दुनिया के चुनौदा प्रौद्योगिकी संस्थानों में नहीं होती। वह मैसाचुसेट्स, हॉवर्ड या स्टैनफोर्ड यूनिवर्सिटी के आगे

कहीं नहीं ठहरते। दुनिया के सौ अग्रणी प्रौद्योगिकी संस्थानों में भी उनका नंबर काफी पीछे है। एक बड़ा सवाल आईआईटी में शोध के स्तर को लेकर भी उठाया जाता है। कुछ महीने पहले केंद्रीय मंत्री और आईआईटी की देन जयराम रमेश ने आईआईटी शिक्षकों के स्तर पर सवाल उठाते हुए कहा था कि वे विश्वस्तरीय नहीं हैं। इस पूरी बहस को देखें, तो आईआईटी में कुछ सुधार की बेहद जरूरत है। सबसे पहला सुधार तो प्रवेश के स्तर पर ही होना चाहिए। आईआईटी में अभी प्रवेश वस्तुनिष्ठ प्रश्नों पर आधारित प्रवेश परीक्षा के जरिये होता है, जिसे कई विशेषज्ञ किस्मत का खेल भी मानते हैं। जाहिर है, कोचिंग संस्थानों का जोर उस तकनीक पर अधिक होता है, जिसके जरिये छात्र अंकों के खेल में सफल हो जाएं। जबकि पहले आईआईटी में प्रवेश के लिए विषयनिष्ठ प्रश्न पूछे जाते थे, जिससे छात्रों की प्रतिभा को परखने का पूरा मौका मिलता था। इसके अलावा दूसरी महत्वपूर्ण बात, तीन साल पहले जो आठ नए आईआईटी खोले गए हैं, उनमें से कई के पास न तो ढंग की इमारत है और न ही पर्याप्त शिक्षक। यदि ढांचा ही सही नहीं होगा, तो इमारत कैसे बुलंद होगी? वाकई समय आ गया है कि आईआईटी को उस सांचे में ढाला जाए, जिसकी कल्पना स्थापना के वक्त की गई थी।

## आईआईटी अपने पैटर्न में सुधार करे : आनंद कुमार

पटना (एजेसी)। सुपर-30 के संस्थापक गणितज्ञ आनंद कुमार ने इंफोसिस के एनआर नारायणमूर्ति द्वारा आईआईटी के छात्रों की गुणवत्ता पर उठाए सवाल पर मंगलवार को कहा कि देश के प्रौद्योगिकी संस्थान को अपने पैटर्न और पद्धति में आमूलचूल परिवर्तन की दरकार है। आनंद ने कहा कि इंफोसिस संस्थापक नारायणमूर्ति ने आईआईटी में हाल के दिनों छात्रों की गुणवत्ता गिरने का मुद्दा उठाया है और संस्थान में प्रवेश पाने वाले 80 फीसद छात्रों को नौकरियों तथा विश्व के श्रेष्ठ संस्थानों में उच्च शिक्षा में अध्येयन के अयोग्य बताया है।

गणितज्ञ ने कहा कि हाल के दिनों में आईआईटी में यदि खराब बच्चे पहुंच रहे हैं तो देश के सर्वोच्च प्रौद्योगिकी संस्थान पर गंभीरता से सोचने की दरकार है। आनंद ने कहा कि देश में 11वीं तथा 12वीं में जो पढ़ाया जाता है और आईआईटी-जेईई की प्रवेश परीक्षा में जो प्रश्न पूछे जाते हैं, उसके बीच बड़ी खाई है। हंगरी गणित ओलंपियाड जैसे कठिन प्रतिस्पर्धाओं के प्रवेश के पैटर्न पूर्व निर्धारित होते हैं, लेकिन लेकिन आईआईटी का प्रश्न पूछने का पैटर्न निर्धारित नहीं होता। आईआईटी प्रवेश परीक्षाओं के पैटर्न में क्यों भूल-भुलैया का खेल खेलता है? उन्होंने कहा कि आईआईटी में यदि अच्छे छात्र नहीं निकल रहे हैं तो इसकी सारी जिम्मेदारी आईआईटी के प्रोफेसर्स की है जो बच्चों को प्रेरित नहीं कर पाते हैं।



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## आईआईटी के प्रोफेसर जिम्मेदार : आनंद

भाषा ॥ पटना : सुपर-30 के संस्थापक आनंद कुमार ने पटना में नारायणमूर्ति के बयान पर कहा कि आईआईटी को अपने पैटर्न और पद्धति में आमूलचूल बदलाव की जरूरत है। आईआईटी से यदि अच्छे स्टूडेंट्स नहीं निकल पा रहे हैं तो इसकी जिम्मेदारी आईआईटी के प्रोफेसरों की है जो बच्चों को प्रेरित नहीं कर पाते।

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## जयपुर, कोटा में एआईईईई ऑनलाइन

जोधपुर।

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केंद्रीय माध्यमिक शिक्षा बोर्ड (सीबीएसई) ने छात्रों की मांग को देखते हुए वर्ष 2012 में आयोजित होने वाली एआईईईई परीक्षा में जयपुर के बाद कोटा को भी ऑनलाइन केन्द्र बना दिया है। बोर्ड की ओर से जारी सूची के अनुसार ऑनलाइन परीक्षा के लिए 22 परीक्षा केन्द्र बनाए गए हैं। यह परीक्षा देश के चुनिंदा इंजीनियरिंग संस्थानों में प्रवेश के लिए आयोजित की जाती है।

ये हैं ऑनलाइन केन्द्र: राजस्थान में जयपुर व कोटा, हैदराबाद, विजयवाड़ा, विशाखापट्टनम, चंडीगढ़, दिल्ली, अहमदाबाद, बैंगलुरु, एनकुलम, त्रिवेन्द्रम, भोपाल, मुंबई, नागपुर, जालंधर, चेन्नई, देहरादून, लखनऊ, नोएडा, कोलकाता, इलाहाबाद, भुवनेश्वर। ऑनलाइन परीक्षा का आयोजन 7 से 25 मई 2012 के बीच किया जाएगा।

65 केन्द्रों पर ऑफलाइन:

परीक्षा को ऑनलाइन करने का यह पहला चरण है। अगले चरण में बाकी के 65 शहर को भी इस सिस्टम से जोड़ लिया जाएगा। ऑफलाइन परीक्षा का आयोजन 29 अप्रैल को किया जाएगा। इसके लिए देशभर में 63 केन्द्र बनाए गए हैं। जबकि रियाद व दुबई में दो सेंटर बनाए गए हैं। राजस्थान में जोधपुर, उदयपुर व अजमेर में ऑफलाइन परीक्षा होगी।

शुल्क में मिलेगी रियायत: परीक्षा के लिए आवेदन भी ऑनलाइन करना होगा। जिसका शुल्क पहले से कुछ कम होगा। जो अभ्यर्थी ऑनलाइन परीक्षा में बैठेंगे उन्हें शुल्क में 150 से 300 रुपए तक की छूट मिलेगी। ऐसे परीक्षार्थियों के अभ्यास के लिए सीबीएसई दिसम्बर तक अपनी वेबसाइट पर जरूरी इंतजाम कर देगी।

छात्र अपनी इच्छा के अनुसार से ऑनलाइन परीक्षा केन्द्र का चयन कर सकेंगे। फीस का भुगतान डेबिट और क्रेडिट कार्ड या फिर डिमांड ड्राफ्ट से किया जा सकेगा।