

Newspaper Clips

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P-16

Medical studies at IITs hit hurdle

FRESH TROUBLE Health ministry objects to wording of amendments

Charu Sudan Kasturi

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NEW DELHI: The Indian Institutes of Technology (IITs) may have to wait longer to start teaching medicine — thanks to a turf war.

The health ministry has raised fresh objections to legal amendments aimed at allowing the IITs to start medical programmes, targeting the wording of the proposed changes, top government sources have told HT.

The ministry has said that the amendments drafted by the human resource development ministry do not accurately represent its views that the IITs must take approval from the Medical Council of India before awarding degrees allowing recipients to practice.

The human resource development ministry and the law ministry are now set to discuss the amendments, sources said.

"Any significant delay in finalising the amendments could hurt the chances of them being in place by the coming academic year. It will be sad if students suffer because of a turf war," a source cautioned.

IIT Kharagpur has already signed an MoU with foreign institutions to start a hospital on its campus.

The HRD ministry and the health ministry in late 2010 agreed to allow the IITs to start multi-disciplinary programmes in medicine on their own.

But courses awarding that lead to medical practice would only be started with prior approval from the MCI, it was decided.

The amendment Bill draft-

Centralised ranks for med schools

THE HEALTH ministry is proposing a centralised ranking for medical education aspirants, which states can choose to use for admissions as a compromise to end a stand off between the Medical Council of India and state governments.

States can impose their own selection criteria over the central ranking under the new proposal, the health ministry is considering after it asked the MCI to withdraw a notification issued last week.

ed by the HRD ministry states that the IITs — India's premier engineering schools — will have the power to start medical courses "without prejudice to the MCI." But the health ministry wants the amendment to specifically contain reference to approvals from the MCI.

"We sense something surreptitious in the way the HRD ministry has drafted the amendment, that is why we are concerned and want clearer wording," a source in the health ministry said.

The HRD ministry wanted to include the amendment allowing medical education at the IITs as a part of amendments, which it tabled in Parliament in 2010.

But opposition from the health ministry at that time stalled the move.

Times of India ND 06-Jan-11 p-21

'Nanoscoops batteries charge 40 times faster'

Rensselaer Polytechnic Institute researchers are pioneering a new study in which they have developed a type of nanomaterial that could spark a new generation of Lithium ion batteries for electric automobiles, laptop computers, mobile phones, and other devices. Called 'nanoscoop', it can withstand extremely high rates of charge and discharge, thanks to its unique material composition, structure, and size. Professor Nikhil Koratkar and his team demonstrated that a nanoscoop electrode could be charged and discharged at a rate 40 to 60 times faster than conventional battery over 100 continuous charge/discharge cycles.

Facial bones can reveal your age:

It's not just the wrinkles that can reveal your age, the bone structure of your face can also tell how old are you, a new study has claimed. Although scientists had already known that there are general bone changes with age, this study by researchers at the University of Rochester Medical Centre is the most detailed one to look at such alterations. Using computed tomography (CT) scans, the researchers analysed the facial bones of men and women across different age groups and found that the structure of the bones differed between age groups. These changes, they said, could influence the way skin and muscle tissue sit on the bones, contributing to an aged look.

Big tuna fetches record \$396,000:

A giant bluefin tuna fetched a record \$396,000, in Tokyo on Wednesday, in the first auction of the year at the world's largest wholesale fish market. The price for the 342kg tuna beat the previous record set in 2001 when a 202 fish sold for 20.2 million yen, a spokesman for Tsukiji market said. "It was an exceptionally large fish," said the official, Yutaka Hasegawa. "But we were all surprised by the price." The massive tuna was bought and shared by the same duo that won the bidding for last year's top fish. —

Math that moves: US schools embrace the iPad

Winnie Hu

Roslynheights (New York): As students returned to class this week, some were carrying brand-new Apple iPads in their backpacks, given not by their parents but by their schools.

A growing number of schools across the nation are embracing the iPad as the latest tool to teach Kafka in multimedia and math with step-by-step animation of complex problems. As part of a pilot program, Roslyn High School handed out 47 iPads to the students and teachers in two classes. The school district hopes to provide iPads eventually to all 1,100 of its students.

The iPads cost \$750 apiece, and they are to be used in class and at home during the school year to replace textbooks, allow students to correspond with teachers and turn in papers and homework assignments, and pre-



Sixth-grade students work on iPads during a class at Pinnacle Peak Elementary School in Scottsdale, Arizona

serve a record of student work in digital portfolios. "It allows us to extend the classroom beyond these four walls," said Larry Reiff, a teacher at Roslyn who now posts all his course materials online. **NYT NEWS SERVICE**

High-tech dining: Eateries upload menus on gadgets

Chicago: The bar is buzzing on a night at Chicago Cut steakhouse as regulars Keith and Peg Bragg sit at a table scanning the wine list. Within seconds, they have all bottles under \$40 at their fingertips using an iPad supplied by their server.

The upscale eatery on the bank of the Chicago River has invested in 40 iPads at \$700 each for wine selection. Since April,

when Apple debuted the tablet, the device is now in use as a full menu at upscale restaurants, hamburger eateries and quick-service chains. Restaurateurs said that's just the beginning.

Chicago Cut partnered with a technology firm to create a custom app that looks like a virtual wine cellar. The tablets are arriving on travel circuit, too. **AP**

Stem cell 'defect' linked to baldness

Inactivation Of The Cells, Not Their Depletion Leads To Hair Loss In Males

Washington: Going bald? Blame stem cell inactivation, say researchers.

A new study, led by George Cotsarelis of University of Pennsylvania School of Medicine, has found that stem cells do play an unexpected role in explaining what happens in bald scalp, the Journal of Clinical Investigation reported.

Using cell samples from men undergoing hair transplant, the researchers compared follicles from bald scalp and non-bald scalp, and found that bald areas had the same number of stem cells as

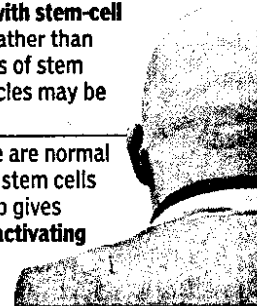
normal scalp in the same person. However, they did find that another, more mature cell type called a progenitor cell was markedly depleted in the follicles of bald scalp.

The researchers surmised that balding may arise from a problem with stem-cell activation rather than the numbers of stem cells in follicles. In male pattern balding, hair follicles actually shrink; they don't disappear. The hairs are essentially microscopic on the bald part of the scalp compared to other spots.

"We asked: 'Are stem cells depleted in bald scalp?'

THE BALD TRUTH

▶ Bald areas had the same number of stem cells as normal scalp in the same person	▶ Problem with stem-cell activation rather than the numbers of stem cells in follicles may be the issue
▶ More mature cell type called a progenitor cell markedly depleted in the follicles of bald scalp	▶ That there are normal numbers of stem cells in bald scalp gives hope for reactivating those stem cells



We were surprised to find the number of stem cells was the same in the bald part of the scalp compared with

other places, but did find a difference in the abundance of a specific type of cell, thought to be a progenitor

cell. This implies that there is a problem in the activation of stem cells converting to progenitor cells in bald scalp," Cotsarelis said.

At this point, the researchers don't know why there is a breakdown in this conversion. "However, the fact that there are normal numbers of stem cells in bald scalp gives us hope for reactivating those stem cells," said Cotsarelis.

In 2007, the researchers found hair follicles in adult mice regenerate by re-awakening genes once active only in developing embryos. **PTI**

BPOs log into IT zone to protect biz from tech biggies

Pranav Nambiar | TNN

Bangalore: India's leading standalone business process outsourcing (BPO) companies are developing capabilities in areas that have traditionally been dominated by IT firms.

This is partly driven by the worry that standalone BPOs are at risk of losing business to multinational technology and consulting majors like IBM and Accenture as well as domestic IT majors like Infosys, Wipro and TCS, which are winning contracts by offering integrated IT-BPO services. As TOI wrote recently, BPOs have been growing at about half the rate at which IT com-

panies have been growing in the past few quarters.

Standalone BPOs are developing tech capabilities in verticals or industries in which their major clients are present. While some offer IT services like enterprise application support, remote infrastructure management (RIM), application development and management (ADM) and business intelligence, others are developing their own IT applications and platforms.

Rohit Kapoor, CEO of BPO company EXL Service, said that in the initial phase of the Indian BPO industry, most processes were manually done and labour arbitrage

AGE OF EVOLUTION



▶ The BPO industry is evolving from being process-oriented to becoming more technology-intensive as customers look for the entire value chain of services

▶ Expectations from BPOs have changed. BPOs have begun re-engineering processes, developing new technologies and offering new platforms to run business processes more efficiently

was the main benefit that outsourcing offered. BPOs then primarily used the clients' existing systems, technologies

and processes. However today, expectations from BPOs have changed. BPOs, Kapoor says, have begun re-engineering

processes, developing new technologies and offering new platforms to run business processes more efficiently.

Deepak Patel, chief executive officer of BPO company Aditya Birla Minacs, echoes this view. The industry, he says, is evolving from being process-oriented to becoming more technology-intensive as customers look for the entire value chain of services.

EXL has set up an innovation lab to generate ideas for technology development. "We invest \$10 million a year on developing IP (intellectual property)-driven applications. We plan to develop at least 3-4 pro-

prietary tools every year, like our E-Track reconciliation solution," Kapoor said.

E-Track is a fully automated, standardized, web-based, customizable solution that is often used by companies to manage their account reconciliation activities.

Aditya Birla Minacs started making IT offerings like enterprise application support, RIM, ADM and business analytics, along with BPO offerings, over the past two years.

"While around a year back, 10% of the company's contracts were integrated BPO-IT service offerings, this has risen to 28% of all deals at present," Patel said.

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Foundation stone laid for IIM-Tiruchi

Staff Reporter

TIRUCHI: Advocating a common entrance test for admitting candidates to management programmes offered by the over 3,000 private institutions in the country, Union Minister for Human Resource Development Kapil Sibal emphasised that quality in higher education was impossible without uniformity in standards.

"I am not sure about the quality of curriculum in these

institutions," Mr. Sibal said on Tuesday after laying the foundation stone for Indian Institute of Management-Tiruchi (IIM-T).

Citing the revised norms of AICTE on FSI (Floor Space Index) and FAR (Floor Area Ratio) in order to offer scope for institutions to expand vertically, he predicted enormous scope for private sector to start management institutions in large numbers.

Mr. Sibal dissuaded management students from opt-

ing for lucrative jobs in the Western world, saying that much of the activities of the world were centred in the region encompassing India and China.

For a better understanding of opportunities and challenges, he urged MBA students to come out with management solutions to the various challenges that the country faced on the fronts of education, health, agriculture and other sectors. With India poised to become the largest

populated country with 1.7 billion people by 2050, management solutions must factor in technology and be suitably routed to address sector and region-specific complexities with a sense of urgency.

Terming the occasion a historic moment, Mr. Sibal expressed the hope that girls, who have been creating a revolution in India by outshining boys in very many spheres, would constitute at least half of the entrants to IIM-T.

Hindu ND 06/01/2011 P-13

Health Ministry has the last word on CET

"It is probably 'innocence and ignorance of official processes' that made MCI issue notifications: sources

Aarti Dhar

NEW DELHI: Ending the confusion over common entrance tests for graduate and postgraduate courses in medicine, the Centre on Wednesday said the Health Ministry would have the last word in the matter and since the two notifications issued by the Medical Council of India had been declared "invalid" by the Ministry, these should be considered withdrawn.

Rejecting the contention that the MCI Board of Governors was "overstepping" its brief, sources in the Ministry

told *The Hindu* that it was probably "innocence and ignorance of the official processes" on the part of the Council that made it issue the notifications and refuse to withdraw them.

In case the Centre at any point in future decided to hold such a test, the notifications could be revived, the sources explained.

Karunanidhi's protest

Meanwhile, Tamil Nadu Chief Minister M. Karunanidhi has written to Union Health Minister Ghulam Nabi Azad seeking a review of

• Issue will be discussed at meeting of State Health Ministers and Secretaries next week

• Ministry in favour of a CET test but wants to go ahead, taking along all States

the CET proposal. Earlier also, he opposed the proposal and even spoke to Prime Minister Manmohan Singh, following which the notifications were put on hold. The Chief Minister said he was writing to Mr. Azad to register his protest.

The MCI notifications would mean a single en-

trance examination for MBBS and MD courses offered by all 271 medical colleges — 138 run by government and 133 under private management.

The issue will be discussed at next week's meeting of the State Health Ministers and Secretaries convened by Mr. Azad. An attempt would be

made to take the States on board as medical education is on the Concurrent List and nothing could be done without their consent, the sources said.

Confusion

Officials in the Ministry said the MCI notifications resulted in confusion among students as many States had already started the process of entrance examinations for MBBS admissions, as had many private colleges and deemed universities. The entrance examinations are held soon after the Class XII

Board examinations are over across the country. In any case, the officials explained, private colleges, minority institutions and deemed universities could not be legally bound to be part of the National Eligibility-cum-Entrance Test (NEET) for graduate and postgraduate medical courses through a regulation. This would need an Act of Parliament, as there were issues of domicile in several States and reservation in all others.

The way out

Many States were already

surrendering 50 per cent of their postgraduate seats to the Central pool and would be unwilling to give up the remaining seats also. The only way out would be to arrive at a "give and take" formula, the sources said.

While the Ministry itself is supporting the idea of a CET to reduce the burden on students who, at present, write as many as 17 entrance tests, it wants to go ahead, taking along all the States and stakeholders to ensure that there is no litigation which would stall the entire process for years.

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ISRO to implement regional navigation satellite system

It will offer India and its neighbours Position Navigation and Timing service

T. Ramakrishnan

CHENNAI: The Indian Space Research Organisation (ISRO) plans to implement the Indian Regional Navigation Satellite System (IRNSS) to provide India and neighbouring countries with the Position Navigation and Timing (PNT) service, S.V. Kibe, Brahmprakash Professor in the ISRO Headquarters, Bangalore, said on Wednesday.

The government had approved the project, which would be implemented in the next few years. Initially, the system would have seven satellites and then 11, he said, addressing the Space Summit at the 98th Indian Science Congress at Kattankulathur near here.

At present, two space navigation systems operate in the world – the U.S. Global Positioning System (GPS) and the Russian Global Navigation Satellite System (GLONASS).

The Galileo of Europe and China's COMPASS (Beidou) are likely to start working in five to 10 years.

Giving an example of the application of the satellite navigation system, Prof. Kibe said a combination of satellite navigation and satellite communication had resulted in the production of handset phones capable of communication and position determination.

He said the ISRO's GPS-Aided Geo Augmented Navigation (GAGAN) project was

being implemented for the benefit of civil aviation. It would especially be useful in aircraft landing.

"For landing, you need accuracy of less than six metres." Despite being useful in position, GPS did not offer the guarantee of service, he said, and this shortcoming would be addressed in the GPS augmentation system like GAGAN.

Talking about the challenges in space observations, R.R. Navalgund, Director, ISRO Space Applications Centre, said very high resolution system, instruments to measure accurately greenhouse gases and constellation of satellites for disaster monitoring, besides long-term calibrated climate data records of land, ocean and atmosphere, would be required to assess the likely scenario of changes in the resources of the earth.

Delivering a talk on small satellites, T.K. Alex, Director, ISRO Satellite Centre, said some Indian universities and other organisations developed and launched small satellites through the Polar Satellite Launch Vehicle.

The SRM University, which is hosting the Congress, was developing one and expected to launch it

soon.

On space biology, P. Dayanandan, emeritus professor, said 14 nations of the International Space Exploration Coordination Group, including India, were hopeful that one day, human beings might live and work in other destinations within the solar system. The most challenging of all problems in space colonisation would be to provide a permanent life support system.

The research now focused on building bio-regenerative systems, which would be based on the principle of biospherics that imitated the life-sustaining biosphere of the earth.

He appealed to the Union government and the ISRO to establish a comprehensive space biology programme and give academic institutions greater encouragement.

V. Adimurthy, Satish Dhanwan Professor, Indian Institute of Space Science and Technology, Thiruvananthapuram, said future challenges in space transport offered a scenario that would be marked by multi-disciplinary optimisation and the cooperation among academia, industry and aerospace agencies across the countries.

• **System will have seven satellites and later 11**

• **Project will be implemented in the next few years**

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Need for more railway engineers

High-speed rail projects will require skilled workers the U.K. just does not have. What is to be done?

Andrew Mourant

The third runway at London-Heathrow was one of the first casualties of the coalition government's regime; hundreds of building projects, including for schools, followed soon afterwards. The comprehensive spending review put paid to new construction and heralded the age of let's stick with what we already have.

The one area that escaped the chop was the rail industry. Big infrastructure projects such as [London] Crossrail and high-speed train links from London to Leeds, Manchester and Birmingham are still going ahead. Add in electrification of the lines in the urban north-west of England, and the demand for skilled labour on the railways looks buoyant for at least the next decade.

The trouble is, though, that unless something is done soon, there won't be enough people to work on these projects or those that might follow.

Skills shortage

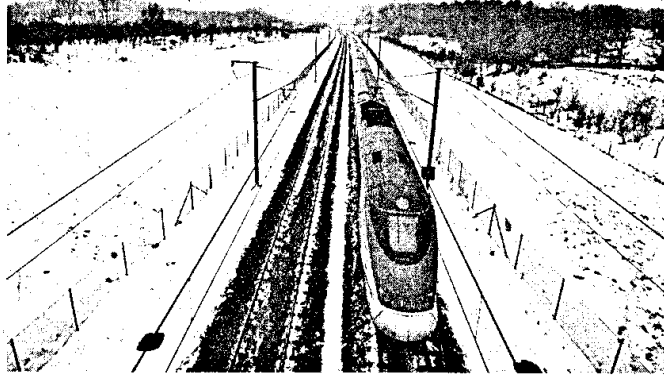
Until its demise, British Rail (BR) ran acclaimed training programmes for engineers. Nothing since has quite matched them, and many who trained with BR will soon retire. Despite training offered by about 100 private providers and colleges, a serious skills shortage is looming.

Last month, in December 2010, Vince Cable, the Business Secretary, gave government backing to a new National Skills Academy for Rail Engineering (Nsare), expected to commence operations this year. One of its missions will be to lure more young people into an industry which, says Gil Howarth, the Nsare programme director, is still saddled with "an oily rag, steam engine image".

Campaign aimed at the young

Howarth knows the challenge is considerable. "Railway engineering certainly isn't a career of choice," he says. "People who do go into engineering find Formula One much more attractive, or aerospace, or nuclear. We have a huge challenge." Things must change if rail is to attract the 1,000 apprentices and graduate entrants Howarth reckons it needs each year. And one way to make a difference is to persuade children and young people that rail is a good career.

To that end, a team of 600 young engi-



CHALLENGE: Railway engineering does not appear to be a career of choice. A Eurostar train at Kent, southeast England.- PHOTO: AFP

neers have been recruited as ambassadors to go into schools, colleges and universities. "The best role models for young people are those who aren't much older, who have recently done an apprenticeship, degree or training in an FE college," says Howarth.

Nsare will work in partnership with the Lloyds Register Educational Trust and the Smallpeice Trust, a charity that promotes engineering careers, to attract secondary school children. At Easter, it will offer a residential course for year nines at Nottingham University in railway systems engineering, and one for older students up to year 13 at Birmingham.

The government is putting in almost £3m over three years and 60 sponsors with an interest in the rail industry have come forward, among them Network Rail. "We have a skills gap, particularly in electrification," a Network Rail spokesman says. "There's been a 15-year period of inactivity with new electrification which has led to low industry demand.

"Now we've had the go-ahead to expand the electrified network, there's a greater demand for skills. The academy will be a channel for the whole industry so that supply can better match demands." Training accreditation will form a major part of Nsare's income. A new qualifications framework will be introduced based on "competencies the industry needs and [that] are nationally recognised". Nsare is also looking at

fresh approaches such as introducing level-4 apprenticeships, on a par with certificates of higher education. Historically, much of the rail industry's intake has failed to progress beyond level 2.

Howarth is keen to get more FE colleges involved. "We've never really engaged with them," he says. Among those he has sought out are colleges in the rail heartlands of Crewe and Derby, whose engineering department is in the Roundhouse, a locomotive shed dating from the 1830s. Derby College has long-established links with rolling stock manufacturer Bombardier and with Rolls-Royce.

The image of railways

Yet even in this heartland, the image of rail as a grimy manual industry is hard to shake off. "Unless young people have contact with someone who knows what's goes on, that's how they see engineering," says the vice-principal of Derby College, Steve Logan. "But those who get the opportunity to work in it and see the reality wake up to the fact that it isn't like that." He sees the college "as a big asset" in helping Nsare promote career routes through engineering. "The academy is keen to broaden the intake, and the industry is still seen as very male dominated," says Logan. "But it isn't what it was 50 years ago; there is a lot more technology, a lot more competences needed, and regulations.

The infrastructure is much more complex. Even for people working out on the

track in the cold and wet, the skill levels needed are quite high." Railways are woven into the fabric of Crewe-based South Cheshire College, whose roots can be traced to the 19th century when three rail companies joined forces to train staff.

The former vice-principal, Stan Cowell, who now works liaising with the community, says dynastic traditions of becoming a "railwayman" have prevailed in Crewe. "When Lord Adonis [the former Transport Secretary] visited, he found most of the students had been recommended by another member of the family or their next-door neighbour," he says.

"But that's changing." Stuart Nixon, 21, a trainee with URS/Scott-Wilson, specialising in signalling, is doing a foundation degree in electrical and electronic engineering at South Cheshire. He is not from a railway family and as a teenager never envisaged a career in rail until URS/Scott-Wilson gave him his first break. Nixon now thinks rail could offer rich possibilities. "The government is spending more money, yet I don't think a lot of people on my course are aware of what's happening and how the railways are trying to move forward," he says. "The signalling I work with is very complex and there are new technical challenges."

Opportunities are growing locally: South Cheshire is now working with a local company, Keltbray Aspire, which is involved in electrification and recently took on another 25 apprentice linesmen. But Cowell admits that a high-skills culture has still fully to take root. "People think level 2 or 3 is good. From the 1990s apprenticeships dropped very significantly within engineering manufacturing, but have started to recover," he says.

Across the world

Howarth says the railways across the world are expanding faster than any other infrastructure and so there is little danger that new recruits to the industry could run out of work in future. In the U.K., there will be more high-speed rail links to follow those already agreed, he says.

"Historically, we've always had major projects – before Crossrail, it was west coast mainline, and before that, the channel tunnel." – © Guardian Newspapers Limited, 2011

Mail Today, 06-Jan-11

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Common test on ice for aspiring doctors

By Savita Verma in New Delhi

THE FATE of the common entrance test (CET) for graduate and post graduate medical courses hangs in the balance as the test has become a bone of contention between the Medical Council of India (MCI) and the health ministry.

The ministry contends the MCI, which announced the test with much fanfare last year, had issued the notification "without taking prior approval" from the government.

This has not gone down well with the ministry, which has ordered the council to cancel its notifications.

In a fresh direction on Tuesday, the ministry asked the MCI to present the CET proposal at the state health ministers' meeting to be held in Hyderabad from January 12 to 13.

The notifications are being opposed by the southern states, where the CET would interfere with the existing reservation system.

In Chennai, AIADMK chief Jayalithaa has called for chief minister M. Karunanidhi to make efforts to withdraw the notification or resign.

Ministry officials said the council had sidestepped them by issuing the notifications. "We have given them autonomy, but that does not mean they can violate the law," officials said.

"Section 33 of the Indian Medical Council Act stipulates that the council may 'with the previous sanction of the central government' make

regulations," they added.

"We never approved (of the notification), though we do not, in principle, have an objection. We have to take the states on board. We have asked them to withdraw the notifications under section 3c of the Act. We have the power to issue them direction," the officials said.

The ministry is also unhappy with the council's misinterpretation of the Supreme Court's interim order in the CET case.

While the MCI claimed that the court had asked it to issue the notification, the court actually had said the pending

case will not come in the way of the MCI notifying any regulations nor anyone challenging the notification, officials said.

The issue goes back to some students moving the apex court against the several medical entrance examinations being held in the country.

The court had asked the MCI and the health ministry for their opinions. The MCI had agreed for a common test and sent the proposal to the ministry, which in turn asked it to present the basic structure of how to do it.

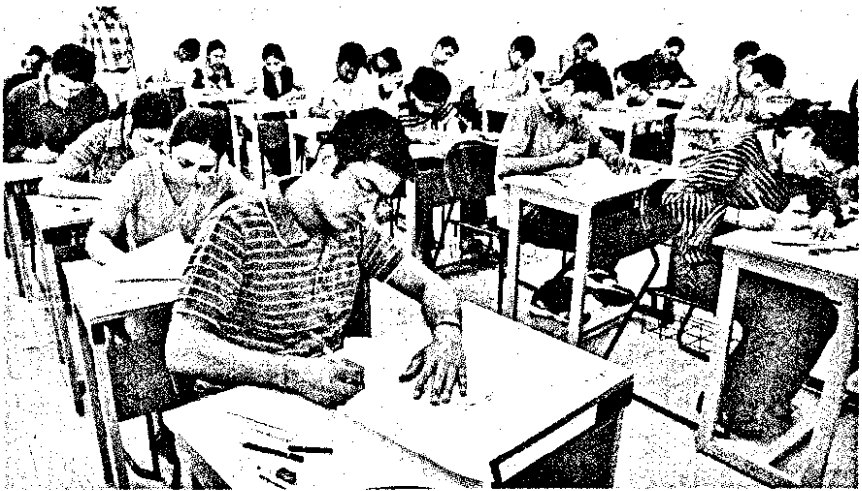
Meanwhile, states like Tamil Nadu objected to the proposal

— following which the Court made states also a party on the matter. The ministry asked the MCI to take the states' views on the issue as the reservation issue was involved.

The MCI is also against a three-year bachelor course on rural health care, which the ministry plans to introduce to address the dearth of doctors in rural areas.

Conversely, the ministry is against the MCI's proposal to reduce the five-and-a-half-year MBBS course to five years.

"We don't want standards of education to be compromised," officials said.



The MCI and health ministry are at loggerheads over the common entrance test.

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EXPERT VIEW

RATAN SHRIVASTAVA

Respond to this column at feedback@livemint.comIT OPPORTUNITIES
IN INDIAN DEFENCE

Market opportunities in Indian defence can be classified into two segments: combat and non-combat.

Combat opportunities for information technologies (IT) companies would pertain to optimum utilization of resources in a battlefield and to battlefield management systems, communication systems, naval IT architecture, and the like. This segment requires proven competence in developing and implementing systems in consonance with the Armed Forces, the end users.

Opportunities in the non-combat defence market are dynamic and open a new business landscape, which has attracted large IT companies, both Indian and foreign. The market landscape, products and segmentation here are vastly different from the combat opportunities, in the sense that IT companies can put to use their knowledge from enterprise resource management in the civilian landscape.

Non-combat opportunities in defence could relate to maintenance of inventory, defence logistics, e-maintenance of weapons and equipment, including aircraft, land systems and vehicles, and human capital and financial management.

In terms of revenue attractiveness, market opportunities in enterprises resource planning, supply chain management, product life management, networking and telecom are high. Intelligent systems and enterprise asset management in the context of modernization of the Armed Forces hold promise of lucrative market growth opportunities.

The landscape can be widened to include defence public sector companies and ordnance factories as well as the replacement of legacy systems, and we have a multi-billion dollar-market spread over the next 10 years waiting to happen.

Phased liberalization of the Indian defence market, along with firm defence budget commitments, has given a fillip to this opportunity. They have helped manage the risks in the typically long-term gestation period of defence contracts.

Companies such as **Tata Consultancy Services Ltd** and **HCL Technologies Ltd** have been early birds in this market. Of late, **Wipro Ltd**, **International Business Machines Corp.**, **BAE Systems-Hindustan Aeronautics Ltd**, and **Infosys Technologies Ltd** have been making a concerted effort to enter this business.

We forecast the Indian defence market to be worth around \$1 billion (₹4,500 crore) in the next five years, the main drivers being the air force's e-maintenance programme and the computerized inventory control programme for the army.

Besides, the fillip from the introduction of new weapons and aircraft as well as the introduction of modern naval crafts will add to the attractiveness of this market in terms of defence offsets.

Ratan Shrivastava is director, South Asia and Middle East, aerospace and defence practice, at Frost and Sullivan.

Pioneer ND 06/01/2011 P-3

HC asks IIT to explain irregularities in JEE

SEEMA HARKAULI ■ NEW DELHI

Expecting the IIT to take self-corrective measures to remove the ambiguities in its Joint Entrance Exam (JEE), the Delhi High Court has asked the prestigious institute to place a copy of its judgment before the committee concerned that holds the examination in 2011. The direction came on a petition filed by Abhishek Goel, a student of IIT-Roorkee, who claimed that his rank in the exam would improve if his answer sheet was reassessed keeping in mind that there were some errors in the multiple choice questions in the JEE paper for 2010.

Noting that there was

undoubtedly some ambiguities and irregularities in the examination and upon reassessment, the possibility of Goel securing a better rank could not be ruled out, Justice Rajiv Sahai Endlaw said, "It is hoped that the respondent no 2, IIT, would in laying down the examination procedure for the next year have due regard to the deficiencies pointed out in this proceeding and ensure that the same are removed in the next examination held. It cannot be lost sight of that it is the career of future generations of this country which is at stake."

Goel had appeared in the Joint Entrance Examination (JEE) held on April 11, 2010 for admission to

The direction came on a petition filed by Abhishek Goel, a student of IIT-Roorkee, who claimed that there were some errors in the multiple choice questions in the JEE paper

IIT. He secured an All-India rank of 3946 and was admitted to IIT-Roorkee. Dismissing Goel's plea for migration to another institute, the court said, "If the answer key

applied by the respondent No 2 IIT is to be interfered with, there is no reason why it should be interfered with only qua the petitioner and not qua the others. The same would result in the entire academic session being stalled and wasted and now that the academic session is underway for several months, that is not deemed to be a feasible option."

Appearing for the petitioner, senior advocate JP Singh submitted that though his answers did not tally with the answer key prepared by IIT, they were correct and found correct by several expert teachers consulted by him. The petition thus pointed out that there are errors in the answer key prepared by IIT and said that there

are errors in the multiple choice questions given in the JEE paper.

Appearing for IIT, senior advocate Sanjay Jain had contended that the students of the level of those who were to take the exams were expected to know of only one correct answer though the other correct answer pertained to much higher level of knowledge which the examinees were not expected to have.

"The respondent no.2 IIT in preparing the answer key/model answer ought not to undermine the level of understanding and intelligence of the examinees and cannot presume that the other correct answer would not be known to the young minds," the court said.

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Small satellites open opportunities in communication, remote sensing

Vinson Kurian
Chennai, Jan. 5

Small satellites have helped 'democratise' launch technology by bringing it within the reach of the common man, according to Dr T. K. Alex, Director, ISRO Satellite Centre, Bangalore.

The Indian Space Research Organisation (ISRO) has been spearheading small satellite development from the 1980s. The initial Rohini series of satellites was a pioneer in this area.

UNIVERSITY SATELLITES

Some of the Indian universities and other organisations have developed and launched small satellites using the ISRO Polar Satellite Launch Vehicle.

These include the Hamsat, IMS-1, Anusat (from Anna University, Chennai), Studsat (students' satellite) and Youthsat.

The next in the series include those being planned by institutions such as the IITs,



Director of ISRO Satellite Centre, Dr T.K. Alex

Indian Institute of Science, Bangalore, the Vellore Institute of Technology and the SRM University, Chennai.

ISRO has been providing these players and peers from abroad (including Canada and Germany) the 'piggy-backing' facility through its launch capabilities, Dr Alex said.

NEW OPPORTUNITIES

Small satellite technology has opened up the feasibility of setting up 'constellations' and 'swarms' of satellites for very specific applications.

Simultaneous multi-point observations for remote sensing and astrophysical studies, large distributed network of virtual instruments in space and constellations of communication and remote sensing applications are emerging as new opportunities in the field.

Essentially, small satellites find applications in low-cost and short-life missions where one can afford to 'take some risks' but with added benefits of quick realisation of the mission.

Use of small multiple satellites help avoid a single point of failure in a constellation of satellites.

Constellation of small satellites could be configured for studies related to solar-type stars and exo-planets.

DUAL PURPOSE

Besides civilian applications, small satellites can be considered for proving the technologies useful for military and security related applica-

tions, Dr Alex pointed out.

Small satellite technology is exciting and has great potential due to its innovative approach to satellite technology.

Compared to the standard technologies used in large satellites, the smaller ones invariably use micro imaging systems, GPS-based position finding, and microelectromechanical systems (MEMS)-based inertial measuring systems.

SPACE APPLICATION

Along with the emergence of small satellites, the usage of low-cost, off-the-shelf electronic components for space application has also gained popularity for missions lasting a few months.

Small satellites are best suited for a wide spectrum of space missions for proving new ideas in communication and sensor technologies, biology experiments and advanced propulsion technologies.

Assam Tribune
Guwahati 04.01.11 p-5

International meet on climate change and water at IIT-G

STAFF REPORTER

GUWAHATI, Jan 3 - The Indian Institute of Technology (IIT) Guwahati's Department of Humanities and Social Sciences is hosting a two-day international conference on climate change and water with specific reference to the eastern Himalayan region. The inaugural event of the conference was held today, an official statement mentioned.

The keynote address was delivered by Prof PP Mujumdar, noted water resources engineer and chairperson of the Department of Civil Engineering of the Indian Institute of Science (IISc), Bangalore. The Dean of Faculty Affairs, Prof PK Bora, inaugurated the conference.

Prof Mujumdar spoke about

the need to localise the understanding of global climate models to scientifically comprehend climate change phenomenon in the eastern Himalayan region, and use the knowledge in public policy formulation.

Speaking about the purpose and agenda of the conference, its convener, Dr Anamika Barua, faculty in Environment Economics at IIT Guwahati said that the specific vulnerabilities associated with the eastern Himalayan region like high-risk seismic zone and poor socio-economic conditions make the region much more vulnerable to the impact of climate change and that there is an urgent need for an interdisciplinary inquiry into the matter.

Addressing the gathering, the head of the Humanities and

Social Science Department, Prof Archana Barua urged the session presenters to keep in mind the specificities of the eastern Himalayan region and North East India, when making their recommendations.

The inaugural event was also addressed by Prof DR Syiemlieh, pro Vice Chancellor of NEHU.

The academic sessions during January 4 - 5 would witness presentations by former Union Environment secretary, Dr Prodipto Ghosh, former Chief Secretary of Jammu and Kashmir and Director of Water Resources Division of TERI, Delhi, Ashok Jaitly, representatives from environment and climate change related bodies from Bangladesh, Bhutan and Nepal, among others.