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■ The Delhi institute, along with the other IITs, will receive ₹250 crore annually over and above the general funding. HT FILE

IITs to get ₹250cr for Make in India boost

Neelam Pandey

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NEW DELHI: The Indian Institutes of Technology (IITs) will get an exclusive outcome-based funding of ₹250 crore annually to promote innovation in areas directly relevant to the manufacturing and design industries. Officials said this is linked to the 'Make In India' campaign of the Narendra Modi government to boost Indian manufacturing.

This is over and above the general funding received by IITs. The move is aimed at making Indian manufacturing competitive and will also be partially funded by the industry.

According to sources, the HRD ministry recently issued guidelines related to this scheme, called 'Uchhatar Avishkar Yojana', and has sought proposals from IITs so that it can be implemented from

this academic year. The projects have to be uploaded on the IIT council website and IIT-Kanpur will make special arrangements for it.

"The project will have to be initiated by the industry or jointly by the industry and the institute so that they are able to develop projects which will help bring down cost of the goods produced by the industry and make them more competitive. At least 25% of the project cost will have to be funded by the industry before the project is considered. Rest of the funding will come from HRD or any other ministry that is interested in it," said a senior HRD official.

The guidelines regarding the scheme were issued in the last week of December and the project will commence from this academic year. "The move will also help strengthen the laboratories and research facilities in the institutions," said an official.

Designing, creating and innovating in India

Prime Minister's 'Start-up India, Stand up India' initiative can succeed only when the focus in our colleges shifts towards creating and owning intellectual property



GRAJ NARAYAN

Creativity is a talent nurtured right from childhood. Various types of arts, crafts and hobbies expose a child to a variety of skills that develop creativity. Design, per se, need not always involve either creativity or innovation. It is only when creativity is embedded into the art of design that innovation happens. Innovation can also result from a strong desire to find new or improved solutions to existing problems. However, this talent is reinforced by a creative aptitude. A combination of all these characteristics is what actually results in innovative designs, products and services—some of which can be revolutionary.

It is, therefore, obvious that innovative engineers cannot be created overnight. The process has to be part of an integrated system which includes parents, teachers, schools, colleges and industries—all of which encourage inquisitive curiosity with practical exposure, leading to development of interest, aptitude, skills and aspirations to excel as a practising engineer.

The reason that barely 7% of the approximately 1.5 million engineers graduating every year in India are employable in core engineering sectors is the absolute lack of aspiration. They get into an engineering college—or a medical college, for that matter—only because of peer and parental pressure, and not out of desire or deep interest. If their ultimate evaluation is also based on rote-based learning and marks obtained, we are neither inculcating in them the "ability to learn" nor practical capabilities that are relevant to a prospective employer. "Learning to learn" and "learning to apply" should, therefore, be the cornerstones of education, be it engineering, medicine, accountancy or management.

Design, innovate & make in India: The Prime Minister is charming young students by 'Make in India' and 'Start-up India, Stand up India' initiatives. However, we need to not just make in India, but create in India, design in India and innovate in India, so as to create and own intellectual property. What we need is a solid design and manufacturing base to enable these initiatives to succeed. However, without competent engineers to drive these programmes, how can the campaigns even take off—whether in aerospace, defence or con-

sumer sectors? For this, we need to skill our engineers not just as computer operators, but also as intelligent designers and engineers in practice.

The core of all these will be effectively addressing our flawed education system—right from primary school to the highest education. If we need to create, innovate and design, we need performing engineers, doctors and scientists who are capable of designing products, or can at least reverse engineer like the Chinese, and then innovate further.

Design & innovation: Design skills lie at the top of the pyramid, which include a variety of multidisciplinary abilities. Creative design requires the essential powers of creative, analytical and critical thinking.

Skilling cannot happen only in a college environment. Universities and engineering colleges need to tie up with industries to provide the engineers hands-on exposure to "live" projects within the industry.

So, what should be the action plan for

educators? Or, in other words, how can engineering students create and innovate in the next year or two?

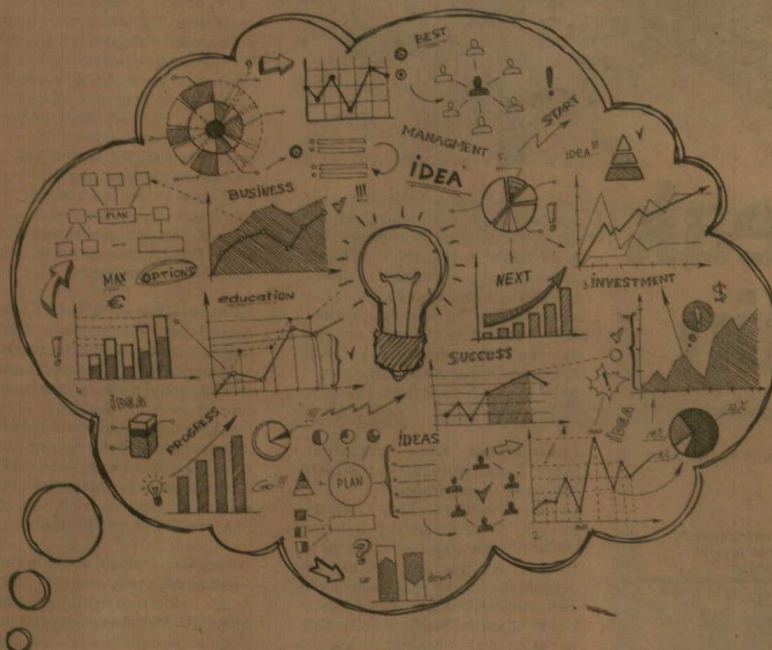
Foundation: Educators need to start the process with first-year students. The laying of strong fundamentals forms the foundation, on which the superstructure of "engineering practice" can be built. Fundamental concepts can be better grasped by students when they are explained with the help of simple, practical, everyday examples of theory.

Innovation: It is then possible to climb the ladder of innovation step-by-step, by teaching students how to think and create, starting with simple hands-on projects that are made by students as early as the very first semester.

Action plan for students: For students, the motto should be "empower yourself to learn". It is not easy to overhaul the engineering education system. Yet we occasionally read about a handful of students who have created a gadget for the farmer, or a solar-powered vehicle, etc. How did these students

achieve the same, in spite of being part of the same system? They educated themselves outside the "syllabus" and college routine. Engineering students need to read the latest journals, magazines and information online in the core sector of their choice—be it electronics, mechanical, chemical or any other. Project work today is considered a dreary chore, to be completed by hook or crook to qualify for a degree. So as to become a creative engineer, students need to break out of this mindset. They need to develop the interest to try and make simple projects themselves, learn from mistakes through analysis, and finally succeed in creating a simple project. This exercise itself is bound to provide a lot of pleasure and excitement, besides providing invaluable educational insights about the subject. Ultimately, these very habits—of keeping oneself abreast of developments, of working with one's hands and trying out an idea in practice—are the ones that will stand them in good stead throughout their career. Indian students can certainly innovate and create in the next two years, by using their imagination and practical experimentation to create products and solutions for everyday life.

The author is founder & MD of Radel Group, an aerospace and electronics design and manufacturing organisation. He is also the chief mentor of the group's Drona Center for Excellence



We need a solid design and manufacturing base if the 'Make in India' and 'Start-up India, Stand up India' initiatives are to succeed. We need performing engineers, doctors and scientists who are capable of designing products, or else can reverse engineer like the Chinese, and then innovate further

आईआईटी और एनआईटी पटना में खुलेगा पेटेंट सेंटर

आईआईटी पटना इन्क्यूबेशन सेंटर के जरिए नए-नए आविष्कार करने जा रहा है, ऐसे में संस्थान में सेंटर होने का फायदा मिलेगा

लक्ष्मी शंकर मिश्र | पटना

आईआईटी पटना और एनआईटी पटना में जल्द ही पेटेंट सेंटर खुलेंगे। संस्थानों ने पेटेंट सेंटर लेने के लिए प्रयास शुरू किए हैं। एनआईटी पटना के निदेशक प्रो. अशोक डे ने बताया कि साइंस एंड टेक्नोलॉजी विभाग से सहयोग के लिए इस संबंध में कई स्तर पर बातचीत हो चुकी है। हम सेंटर के लिए अलग से इन्फ्रास्ट्रक्चर की तैयारी में हैं। इन्फ्रास्ट्रक्चर के तैयार होने के साथ पेटेंट सेंटर खुलना आसान हो जाएगा। उन्होंने बताया कि आईआईटी पटना में भी जल्द सेंटर खुलेगा। प्रदेश के इन टॉप तकनीकी संस्थानों में खुल रहे पेटेंट सेंटर को यहां के छात्रों के हर छोटे-बड़े आविष्कारों के साथ ही तकनीकी और मेडिकल क्षेत्र में प्रदेश के अन्य इन्वेंशन के पेटेंट की दिशा में बड़ा कदम माना जा रहा है।



आईआईटी पटना में इन्क्यूबेशन सेंटर खुलने से राह आसान

प्रो. डे के मुताबिक आईआईटी पटना में इन्क्यूबेशन सेंटर खुलने के बाद पेटेंट सेंटर खुलने की राह और आसान हो गई है। उन्होंने बताया कि पेटेंट सेंटर खोलने की तैयारी पहले से रही है। अब इस दिशा में तेजी से हमने कदम बढ़ाए हैं। आईआईटी पटना इन्क्यूबेशन सेंटर के जरिए नए-नए आविष्कार करने जा रहा है। ऐसे में संस्थान में सेंटर होने का फायदा मिलेगा।

एनआईटी में इन्वेंशन सेंटर खुलने से मिला फायदा

एनआईटी पटना में इन्वेंशन सेंटर का निर्माण किया जा रहा है। इन्वेंशन सेंटर पूरी तरह से रिसर्च और नए-नए आविष्कारों को समर्पित है। यहां छात्रों को सिर्फ और सिर्फ अपने आविष्कार पर काम करने की आजादी है। उन्हें संस्थान खुद हर तरह से सहयोग करेगा। इस सेंटर के खुलने के कारण यहां पेटेंट सेंटर की राह आसान हुई है। इस सेंटर में एनआईटी के साथ ही बाहर के मेधावी और रिसर्च ओरिएंटेड स्टूडेंट्स को भी आविष्कार के लिए मौका दिया जाएगा।

पेटेंट में प्रदेश की हिस्सेदारी 1% तक सीमित

एक आंकड़े के मुताबिक देश में सिर्फ 20 फीसदी कंपनियां ही पेटेंट कानून के तहत खुद को जोड़ते हैं। बड़ी संख्या में लोगों को इसकी जानकारी नहीं या फिर उन्हें पता ही नहीं कि इसका कितना लाभ है। इसमें बिहार का आंकड़ा तो एक फीसदी के ही आसपास है। ऐसे में इन संस्थानों में पेटेंट सेंटर खुलने का पूरे प्रदेश के आविष्कारों को बड़ा फायदा मिलेगा।

छात्रों को प्रोत्साहित करने की जरूरत

प्रदेश में मेधा की कमी नहीं है। संस्थानों में भी छात्र कई ऐसे आविष्कार करते हैं जो यूजिक हैं। पर, वे पेटेंट नहीं करा पाते। मतलब कि उसका लाभ नहीं उठा पाते। छात्रों को आविष्कारों के प्रति आकर्षित करने के लिए प्रोत्साहन की जरूरत है।

Neuroscience curriculum soon in IIT Madras

<http://www.thehindubusinessline.com/news/education/neuroscience-curriculum-soon-in-iit-madras/article8089289.ece>

IIT Madras will soon have neuroscience curriculum for engineers. This was decided at the inaugural workshop on Computational Brain Research, organised by the Office of International & Alumni Relations (I&AR), IIT Madras.

The week-long workshop ended recently with a decision to promote cross-institutional collaborations and to develop a neuroscience curriculum for engineering students at the institute, says a release.

R Nagarajan, Dean I&AR, in a press release said "At IIT Madras, we would like the Centre for Computational Brain Research to quickly reach critical mass in terms of participating faculty, post-doctoral and students so that the work achieves significant impact through individual and collaborative efforts." he said.

Kris Gopalakrishnan, executive vice chairman (former co-chairman) of Infosys, set up three Chairs in computational brain research at IIT Madras with an endowment of ₹ 10 crore each. The first occupant of the chair is Partha Mitra, Principal Investigator at Cold Spring Harbor Laboratory, New York.

New test for entry to engineering to be first conducted this October

Neelam Pandey

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NEW DELHI: Learning by rote or attending coaching classes will no longer guarantee admission to popular and premier engineering institutions in the country.

The Union human resource development (HRD) ministry will soon set up a National Authority for Testing (NAT) to conduct a new entrance examination — starting this October — that will replace the two-tier joint entrance examination (JEE) main and advanced tests for entry into engineering colleges.

The JEE is a national common entrance examination conducted to provide admissions to several engineering courses.

The focus now will be to standardise the test so that it can't be cracked by coaching insti-

NEW EXAM TO REPLACE JEE. WILL TEST STUDENTS ON LOGICAL, ANALYTICAL ABILITIES TO DISCOURAGE COACHING CLASSES, LEARNING BY ROTE

tutes or "teaching shops" and learning by rote — which bring down the standard because such practices fail to teach analytical and logical skills needed for scientific research.

The new system will test the logical and analytical abilities of students rather than knowledge on subjects. The first such test from October will screen students aspiring for admission to the 2017 session, sources said.

Under the new system, students will be able to write the test

online four times a year. About 400,000 students will then be shortlisted for the joint entrance examination (JEE), which will follow the same pattern of the current advanced test and examine their knowledge of physics, chemistry and mathematics. The score will be used for admission to IITs and NITs.

The NAT will be constituted after approval from the Union cabinet and registered as an independent society under the HRD ministry.

The concept was given in-principle approval by the ministry at a meeting last week, where contours of the authority were discussed.

"The NAT is a general aptitude score like SAT and will be used for JEE," said a senior official.

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New test for entry

"The National Authority for Testing will be mandated to design and administer world-class aptitude tests to judge innovative abilities, logical thinking, problem solving and critical thinking of students," the official added.

Officials said the NAT would be nurtured to evolve as a globally-acclaimed organisation for educational and psychological tests with the ability to design exams for people from diverse cultural, linguistic and social backgrounds.

The NAT is likely to have a technical wing too along with wings for tests, IT, administrative and finance. "The technical wing will have educationists and psychometricians while the test wing will comprise administrators specialising in conducting tests," an official said.

The Central Board of Secondary Education (CBSE) has announced that the offline JEE main exam for 2016 will be held on April 3 while the online test is scheduled for April 9 and 10.

HRD MINISTRY TO PROVIDE FREE E-BOOKS ON MOBILE APP

HT Correspondent

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LUCKNOW: The Union human resource development (HRD) ministry is set to provide 12,000 books in e-format for higher education in the next month under its prestigious e-Pathshala initiative.

According to HRD minister Smriti Irani, this study material in the form of books will be available free on a mobile app.

Irani was visiting the Babasaheb Bhimrao Ambedkar University (BBAU) here to lay the foundation stone of a women's hostel. Addressing the gathering, she said, "The study material would be related to various subjects and topics for higher education."

The ministry has already made available all NCERT textbooks, from class 1 to 12, in e-format for students.

Irani also said that under the ministry's 'Unnat Bharat Abhiyan', all higher educational institutions would now have to adopt 10 villages, instead of five, in their vicinity.

Under the scheme, institutes like the IITs, IIMs and central universities have to adopt villages to educate children who do not have access to education.

"The institutions must make sure that they mention in the academic record of every student about his or her participation in the abhiyan," Irani said.

She also assured all financial aid to BBAU and other institutions in implementing the scheme.

Irani also appealed to students to help one needy person each after passing out from their institutions. "After getting their degrees, students are busy searching for a job. This is justified as they have to secure their future and serve their parents. But they must also make sure to help at least one needy person each," she said.

Much needs to be done to bring higher education at world level, says President Mukherjee

<http://www.dnaindia.com/india/report-much-needs-to-be-done-to-bring-higher-education-at-world-level-says-president-mukherjee-2164028>

The President hoped that recent listing of Indian Institute of Science (IISc), Bangalore, and Indian Institute of Technology (IIT), Delhi, in world's top 200 research and development institutions would provide impetus for others.

President Pranab Mukherjee on Saturday said much was required to be done to bring the higher education of the country at the world level.

Speaking at the Seventh Convocation of Vinoba Bhave University at Hazaribagh on Saturday, he said India was world leader in the field of higher education and research for 1800 years. Taxilla University of ancient India was a seat of specialised learning for Indian, Greek and Persian Civilisations.

The President hoped that recent listing of Indian Institute of Science (IISc), Bangalore, and Indian Institute of Technology (IIT), Delhi, in world's top 200 research and development institutions would provide impetus for others.

Stating that in last three and half years he had visited more than 100 institutions, where he emphasised on the need to improve international rankings of Indian institutions of higher education, The President said there was no lack of merit on the part of our higher learning institutions, however, they need to promote themselves better.

President Mukherjee conferred Honorary Doctor of Literature (D.Lit) on former union minister Yashwant Sinha by the Vinoba Bhave University for his significant contributions in the field of economy, international relations and public services.

PU not centrally funded varsity: Centre

<http://www.hindustantimes.com/punjab/pu-not-centrally-funded-varsity-centre/story-nK9owU69GD3gzPIKTTMN2M.html>

In another blow to faculty members of Panjab University (PU) on retirement age, the Union government on Friday told the Punjab and Haryana high court that it was not a centrally funded institution.

Appearing before the bench of justice Amol Rattan Singh, assistant solicitor general Chetan Mittal said the meaning and scope of centrally funded institutions pertained to those institutions which were exclusively funded by the central government through the ministry of human resource development (MHRD) or the University Grants Commission (UGC).

The central government response came on the query posed by the high court.

The Centre has made it clear that the MHRD enhanced the age of superannuation from 62 to 65 of teachers engaged in classroom teaching and who were occupying teaching positions on regular employment against sanctioned posts in centrally funded higher and technical educational institutions in 2007. The state governments were also requested to do the same in view of shortage of experienced teachers. But it

categorically said the PU was not a centrally-funded institution for the purpose of 2007 circular as some part of the funding was made by the state government (Punjab).

The court has now asked the MHRD to submit funding details of central universities and the central-government funded institutions such as the Indian Institute of Technology (IITs), Indian Institute of Management (IIMs) on the next date of hearing on January 20. The high court bench orally observed that it was now clear that the PU received a grant of 92% from the central government and the funding pattern of these institutions could help in settling the controversy.

The HC was hearing a petition filed by faculty members of PU in which they are demanding enhancement of retirement age from 60 to 65. The high court has stayed retirement orders of over 30 such petitioners in the past one year. The Centre does not recognise PU as the central university, but the petitioners are claiming that it is a centrally funded university as it is getting up to 92% grant from the MHRD. Punjab and Centre both are not in favour of increasing the retirement age.

January 11

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आविष्कार

आईआईटी रुड़की के वैज्ञानिकों ने हासिल की प्रारंभिक सफलता

जामुन की बिजली से रोशन होंगे घर

रीना डंडरियाल >> रुड़की

डॉक्टर सेहत के लिए फलों के सेवन पर जोर देते हैं, लेकिन अब वैज्ञानिक इनसे बिजली बनाने की विधि विकसित करने में जुटे हैं। वह दिन दूर नहीं जब आपके घर फलों से रोशन हो जाएं। रुड़की स्थित भारतीय प्रौद्योगिकी संस्थान (आईआईटी) के वैज्ञानिकों ने जामुन से बिजली बनाने में प्रारंभिक सफलता हासिल कर ली है।

हालांकि प्रयोग अभी प्रारंभिक दौर में है, लेकिन उम्मीद जताई जा रही है कि गैर परंपरागत ऊर्जा के क्षेत्र में इससे मिलने वाली ऊर्जा सौर ऊर्जा से सस्ती पड़ेगी। आईआईटी में भौतिक विज्ञान के असिस्टेंट प्रोफेसर सौमित्र सतपथी और उनकी टीम ने यह नायाब प्रयोग किया है। प्रो. सतपथी के अनुसार अभी सौर ऊर्जा के लिए जो तरीका अपनाया जा रहा है, उसमें सिलीकॉन



मटेरियल से बनी डिवाइस उपयोग में लाई जा रही है। इससे मिलने वाली बिजली काफी महंगी है। उन्होंने बताया कि प्रयोग अभी चल रहे हैं और उम्मीद है कि आने वाले समय में हम इसे सौर ऊर्जा की तुलना में 10 गुना तक सस्ता कर पाएंगे।

ऐसे किया प्रयोग

प्रोफेसर सतपथी ने बताया कि जामुन में एंथोसायनिन नामक डार्क ऊर्जा उत्पादन का स्रोत है। जामुन के अलावा चेरी और ब्लूबेरी जैसे फलों में भी यह पाई जाती है। ऐसे में इनसे भी बिजली का उत्पादन किया जा सकता है। प्रोफेसर ने बताया कि जामुन के गूदे को गुठली से अलग कर छिलके के साथ पीसा गया। इसमें एंथेनॉल मिलाया गया। मिश्रण को खास उपकरण में एक मिनट के भीतर पांच हजार बार घुमाया गया। ऐसा करने से मिश्रण के ऊपर एंथोसायनिन की परत जमा हो जाती है। फिर इसे 12 घंटे छोड़ दिया जाता है। सूखने पर प्लेटिनियम मैटल इलेक्ट्रोड से जोड़ा जाता है। इस नई डिवाइस को डार्क सेसेटाइज सोलर का नाम दिया गया है। यह डिवाइस सौर ऊर्जा को विद्युत ऊर्जा में बदल देती है।

IIT alumnus hangs self at US varsity

TIMES NEWS NETWORK

Hyderabad: A 23-year-old IIT alumnus from Hyderabad has committed suicide at the North Carolina State University in the US, allegedly after scoring low in exams.

Shiva Karan, who was pursuing a master's in computer science at the university in Raleigh, was found hanging in his hostel room on Thursday. He went to the US six months ago.

Although the exact reason is yet to be ascertained, the student's maternal uncle Shiva Prasad told the media on Friday that his nephew may have done it "because he got lower-than-expected grades in exams". Shiva's parents are said to be in shock.

"We are still trying to learn more about what may have happened in Shiva Karan's case. Our volunteers in North Carolina will provide any necessary logistical support," V Chowdary Jampala, president of Telugu Association of North America, told **TOI**.

Virat Vaibhav ND 10/01/2016 P-08

कैट में अलग ट्रेंड देखने को मिला इस बार

देहरादून। आईआईएम ने कॉमन एडमिशन टेस्ट-2015 (कैट) का परिणाम जारी कर दिया। इस बार प्रदेश में अलग ट्रेंड देखने को मिला है।

आईआईटी रुड़की से आने वाले हाई स्कोर के बीच दो होनहार ऐसे भी हैं, जिन्होंने दूसरे संस्थानों से इंजीनियरिंग करते हुए कैट में 99.99 परसेंटाइल स्कोर किया है। हरिद्वार के अभय अग्रवाल और दून के ऋषभ ने अलग-अलग यूनिवर्सिटी से बीटेक करके यह कामयाबी हासिल की है। आईआईटी रुड़की के छात्र निश्चय बुद्धिराजा ने 100 परसेंटाइल स्कोर किया है।

वह दिल्ली के रहने वाले हैं। कैट के परिणाम में इस बार भी आईआईटी रुड़की के कई छात्रों ने बाजी मारी। इन सबके बीच अहम बात यह रही कि 99.99 परसेंटाइल

पाने वाले दो छात्र ऐसे भी रहे, जिनका बैकग्राउंड आईआईटी का नहीं है। पंतनगर यूनिवर्सिटी से बीटेक करने वाले हरिद्वार निवासी अभय अग्रवाल और यूनिवर्सिटी ऑफ पेट्रोलियम एंड एनर्जी स्टडीज से बीटेक करने वाले ऋषभ यादव ने कैट में इतिहास रचा है। इनसे अलग 100 परसेंटाइल वाले निश्चय बुद्धिराजा, 99.99 परसेंटाइल हासिल करने वाले यश गुप्ता व निहार अग्रवाल आईआईटी रुड़की के छात्र हैं। आईआईएम में दाखिले की इस प्रवेश परीक्षा में इस बार एक और अहम बात यह भी सामने आई कि गत वर्ष के मुकाबले रिजल्ट बेहतर रहा। गत वर्ष 99.84 तक स्कोर उत्तराखंड से रेकॉर्ड हुआ था, इस बार 99.99 परसेंटाइल में चार छात्र हैं, जिनमें दो आईआईटीयन और दो अन्य विवि के हैं। ■

Union HRD Minister Smriti Irani inaugurates World Book Fair

<http://www.awazedost.com/union-hrd-minister-smriti-irani-inaugurates-world-book-fair/>



Union Human Resources Development Minister Smriti Irani on Saturday inaugurated the 24th World Book Fair in the capital. The fair aims to inculcate reading habits or book culture in the age of internet. The theme of the fair this time is "India's cultural heritage". The nine-day-long fair would see China as the 'guest nation'.

Eighty one Chinese publishers and 5,000 Chinese books will be showcased in the fair which apart from Chinese language will also be available in English and Hindi.

Publishers from countries like Pakistan, Germany, China, Spain, Poland and Nepal will also participate.

Entry to the fair would be free for school children and this year the fair is being organised in January for school children.