IS THE QUALITY OF IIT STUDENTS DECLINING?

Yes, thanks to coaching classes and, paradoxically, the IIT brand but let's also give credit where it is due.

DEBATE

CAUTAM KARIKA

Deepta, IIT Guwahati

Students get used to a system of 'spoon feeding', prevalent in coaching classes and they are slow to adapt to the institute's way of teaching.

S. PRASAD

Director, IIT Delhi

To describe the entire student community as not being up to the mark is uncalled for. It hardly does justice to the excellent students in these institutions.

October 19, 2011

Newspaper Clips

Business Standard ND 19/10/2011

P-12
Pioneer ND 19-Oct-11  P5

Inaction reveals IIT faculty nexus in JEE bunglings

PIONEER NEWS SERVICE  ■  NEW DELHI

IIT Roorkee has failed to lodge any FIR so far against mass copying and irregularities at one of its Joint Entrance Examination (JEE) centre at Bhatinda in defiance of the directives of the then Chairman, IIT Joint Admission Board 2011 (JAB) and Director IIT Kanpur, even after four months. This has come to light through a response to a RTI query filed by Vipin Gupta.

During IIT JEE 2011, an aspirant, appearing at Giani Zail Singh College of Engineering & Technology, Bhatinda had lodged a written complaint that some of the JEE candidates, in her examination room, were helped by the invigilators and the college staff and that there was mass copying by students at the centre. After the bungling got established by an inquiry committee, IIT-Kanpur, the organiser of the Joint Entrance Examination this year, took serious note of the allegation. Since Bhatinda centre falls under IIT-Roorkee, Director IIT Kanpur, advised its Director, and the Chairman, JEE, IIT Roorkee to lodge an FIR with the local police authorities so that "the matter could be further investigated to ascribe the blame on the concerned person(s)."

While the RTI response sources pointed out. What is worse, the IIT Roorkee faculty members, Professor CSP Q/ha (Civil Engineering) and Professor Prakash Biswas (Chemical Engineering), who were supervising the JEE Examination at Bhatinda centre had remained silent to the complaint of copying, the sources pointed out.

Further, the issue was kept under wraps by the concerned faculty members. It was brought to the fore by a parent of the JEE aspirant, who had to lodge a written complaint with the Chairman, JAB and Director, IIT Kanpur. "With no FIR lodged as yet, only compounds to our suspicion, they added.

The sources pointed to a similar incident in 2008 from a centre in Kota in Rajasthan. The JAB later decided to cancel Kota as a centre for IIT-JEE. There is no JEE centre in Kota since then. However, the inquiry committee's findings were not disclosed.

In another case, an RTI query has revealed that the son of an IIT Kharagpur Director & JAB Chairman, Prof SK Dube was caught impersonating in JEE at a Delhi JEE Centre. Yet no FIR was lodged, no investigation was carried out by CBI/police, so far.
IIT-Roorkee in dock over mass copying

Akshaya Mulik | TNN

New Delhi: IITs, considered as the repository of high standard, do not think copying is a crime. The Joint Admission Board (JAB), which conducts JEE for admission to IITs, has directed IIT-Roorkee to file an FIR on mass copying in the Bhatinda centre during this year’s entrance test held more than four months ago.

In an RTI reply, IIT-Roorkee has said the FIR has not been lodged and the decision is still pending. IIT-Roorkee was asked to file an FIR since two of its faculty members — Prakash Biswas and C S P Ojha — were sent as invigilators to the Bhatinda centre for conducting the JEE.

A fact-finding committee, set up by JAB, has barred Biwas and Ojha along with Sushil Kumar, another IIT-Roorkee staff, from any JEE-related activities for five years. The report had said that there “appears to be some nexus amongst the college authorities, certain invigilators and an employee of Giani Zail Singh College (centre for JEE)”.
Moving to one IIT entrance

Though a welcome move, we give you the three main concerns and the council’s response

Pankti Mehta and Pooja Birla

The council of the Indian Institutes of Technology (IITs) proposed a pan-India entrance test for aspiring engineering students, to be started from the 2013 academic year, to replace the IIT joint entrance examination as well as those currently in place at various state engineering colleges. The proposal also aims to increase the weightage given to Class 12 marks.

While students and academicians welcome the decision, saying it will benefit students as they will not have to take several separate entrance tests, they suggest that the panel plan the new exam to avoid discrepancies.

“The single test is expected to come into effect in 2013,” says Devang Khakhar, director, IIT-Bombay. “We’re taking our time to launch it, and it will probably be an online test for better computation. There will be one merit list for all colleges to choose from.”

QUALITY OF EXAMINATION MATTERS MOST

“The merits of the decision... will bear fruit only if it is structured in a way that facilitates selection for each type of institute,” says KC Tiwari, principal, Bharati Vidyapeeth Institute for Engineering. “The SAT, GMAT and GRE systems have proved successful in this regard. Each institute must, however, be given options to include additional criteria.”

“The IIT JEE is conducted by a qualified panel that knows IITs’ requirements well,” agrees Nipun Katyal, an IIT-B alumnus and a management consultant. “Ideally, we should keep the JEE intact and club the others into one exam, and perhaps extend the JEE merit list so that quality colleges that are ranked just below the IITs can also have their pick.”

WHAT WEIGHTAGE TO CLASS 12 MARKS?

“It should be made clear how much weightage the Class 12 marks are given,” says Nipun Katyal, an IIT-B alumnus and a management consultant. “It is almost impossible to normalise marks from different boards so that there is fair competition. A detailed statistical study is required, after which systems can be put in place to equalise different boards, but these can’t remain watertight solutions. If an accurate system is not in place, they should perhaps not include the board marks.”

IIT-Bombay director Devang Khakhar says the council will develop a fair method to standardise marks from boards.

A SINGLE STANDARDISED TEST

“Standardisation is essential,” says Seema Shah, acting principal, Vidyamandir Institute of Technology. “One centralised examination will enable students to work hard to crack the exam in the best possible way. With too many entrances, students lose focus. Moreover, a single test will ensure a standardised evaluation and a defined time span for admissions.”

However, a single exam may put too much pressure on students, say some experts. “While it is a welcome idea, it must be planned properly. A student may not be feeling well on that day, or may have circumstances that render him or her unable to prepare properly,” says G Raghuwani, director, BITS Pilani.

“Therefore, the exam should be conducted two or three times a year to give the student the best opportunity.” The council is yet to decide upon the logistics, and how often the test will be held.
IIT-M biotech students devise technique to prevent superbugs

Chennai: Many scientists and experts fear that antibiotic-resistant bacteria, such as the superbug that is rattling the medical community, originate in laboratories. And a team of 11 biotechnology students and one electrical engineering student from IIT Madras has formulated a new technique to grow bacteria without using antibiotics to kill other bacteria types in a bioreactor. In biology, the standard procedure to grow one type of bacteria in a reactor involves making the desired bacteria resistant to an antibiotic and then introducing the toxin to kill all the other bacteria.

Using genetic engineering, the students extracted the DNA sequence from the proteorhodopsin gene in marine bacteria, modified it to make it more user-friendly for research, and inserted the sequence into E.coli bacteria. The bacteria read the DNA and started producing the proteorhodopsin protein, which is capable of absorbing light and producing energy that it uses to multiply. This means the protein-injected bacteria can multiply in the absence of food – sugar – while others cannot. The energy produced in the cell can also be used to improve the manufacturing process of certain biochemicals, said Kousik S, a member of the team.
Hindustan Times
Title: QUALITY OF EXAMINATION MATTERS MOST
Author: 
Location: 
Article Date: 10/19/2011

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IIT-Bombay director Devang Khakhar
says the council will develop a fair method
to standardise marks from boards.
New education policy draft ready

Committee to discuss recommendations with Sewa Singh Sekhwan today

Headed by Guru Nanak Dev University's former Vice-Chancellor Dr SP Singh, the committee has proposed to set up a state school education accreditation and assessment board to evaluate the standard of education in various school-level academic institutions. For colleges, a university education board has been proposed, which would conduct examination so that the universities could focus on research and also on the improvement of academic standards. It has proposed to set up Punjab state higher education council to regulate higher education. Uniformity in syllabus of all universities in the state has been proposed.

The committee has recommended the constitution of a school regulatory authority to oversee the administrative and academic functioning of government schools, aided schools, recognised schools and non-recognised schools. The proposed authority, it says, should fix the academic qualifications, service conditions, salary of teaching staff and fee structure in schools. It has recommended the constitution of permanent teachers' selection board to fill the vacant posts of teachers.

Setting up separate boards at school, college and university level to evaluate the standard of education
- Uniformity in syllabus of all universities
- Body to fix qualification, service condition, salary of teaching staff and fee structure norms in schools
- Earmarking at least 6 per cent of state's GDP for spending on education
- Special increments for state and national award winning teachers and also for those holding higher qualification such as MPhil and PhD
- Reducing the number of holidays in secondary schools

The restructuring of the Punjab School Education Board (PSEB) as an autonomous body has also been recommended. Then, the committee also wants an end to the semester system introduced by the PSEB at the secondary level. The new system has failed to serve the purpose and the board should switch to the old annual system of examination," says the document.

The state should earmark at least 6 per cent of its GDP for spending on education and of that 60 per cent should be non-plan expenditure (on salaries, etc) and remaining should be from the plan for development of educational institutions. Special increments have been recommended for state and national award winning teachers and also for holding higher qualification such as MPhil and PhD.

There is also a proposal to reduce the number of holidays in secondary schools. Besides summer vacations for 30 days and a seven-day break during winter, 10 gazetted holidays have been proposed.
CHINESE WHISPERS

IIM Tirupati?
The Indian Institutes of Management (IIMs) may be the most premier institutes for management studies in the country, but even they don’t measure up when it comes to competing against the legendary Tirupati temple in Andhra Pradesh. Recently, when faced with questions about their money-raising abilities, the director of one of the leading IIMs remarked that while they were struggling to raise funds, despite being “temples of learning”, they felt inferior to Tirupati, which raises an average of ₹2 crore a day.
MBA: No change in multiple test system

CMAT to be held in February next year

DIPTI SONAWALA
MUMBAI, OCTOBER 18

The All India Council for Technical Education (AICTE) has announced that the Common Management Aptitude Test (CMAT) will be conducted in February 2012 instead of 2013 as initially decided. While CMAT was expected to be a single entrance test, the authorities say they have no plans to change or stop the other entrance tests.

Earlier this year, AICTE authorities had mooted the idea of a national-level single entrance with a view to give relief to students from preparing for several aptitude and entrance tests. However, authorities say this year their focus is to implement CMAT successfully.

"Since CMAT will follow the same pattern as other tests, the students can be easily spared from paying for and preparing and taking different competitive exams for admission to management courses across the country," said Anil Kumar Shukla, AICTE regional officer for the western region.

"From 2012 aspiring management students can prepare for CMAT, which will be accepted by all AICTE approved management colleges. It will be applicable for admissions in postgraduate MBA courses and postgraduate diploma in business administration."

AICTE wanted CMAT to help reduce the stress and financial burden on students. However, the idea did not go down well with the B-schools and various organisations like Association of Indian Management Schools (AIMS) and the Society for Promotion of Education in India, which challenged AICTE's December 28, 2010, notification. The notification called for sweeping changes in the way B-schools conduct their entrance process and conducting one single entrance/aptitude test for admissions to management colleges.

However, some of the private B-schools had objected to this notification and subsequently approached High Court and Supreme Court for relief. On July 26, 2011, the Supreme Court had allowed AICTE to conduct its own entrance exam.

"Does this mean there will be yet another entrance test in the list now? Students want to ensure they get admission in a good college and for that they will appear for all the tests. I don't think this will work," said a director of a well known B-school in Navi Mumbai.

"As of now we have no plans to bring about any change in the current multiple entrance test system. We have to work as per the court's order and so for now we are just conducting CMAT," added Shukla.
Top Global B-Schools
An MBA is a lifetime investment. Here are the 10 best programmes, according to EIU

<table>
<thead>
<tr>
<th>Rank</th>
<th>B-School</th>
<th>Total tuition fees, $</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Dartmouth College  Tuck School of Business, (US)</td>
<td>101,400</td>
</tr>
<tr>
<td>2</td>
<td>University of Chicago Booth School of Business, (US)</td>
<td>101,800</td>
</tr>
<tr>
<td>3</td>
<td>IMD - International Institute for Management Development, (Switzerland)</td>
<td>57,692</td>
</tr>
<tr>
<td>4</td>
<td>University of Virginia  Darden Graduate School of Business Administration, (US)</td>
<td>99,000</td>
</tr>
<tr>
<td>5</td>
<td>Harvard Business School, (US)</td>
<td>102,400</td>
</tr>
<tr>
<td>6</td>
<td>University of California  at Berkely- Haas School of Business, (US)</td>
<td>104,656</td>
</tr>
<tr>
<td>7</td>
<td>Columbia Business School, (US)</td>
<td>106,416</td>
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<td>Stanford Graduate School of Business, (US)</td>
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<td>York University, Schulich School of Business, (Canada)</td>
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<tr>
<td>10</td>
<td>IESE Business School  University of Navarra, (Spain)</td>
<td>94,267</td>
</tr>
</tbody>
</table>

Source: The Economist Intelligence Unit

2.7 bn

the number people who will face severe water shortages by 2025 if consumption continues at current rates. An estimated 1.8 billion people will live in areas plagued by water scarcity and 36 countries with 1.4 billion people are projected to be either freshwater scarce or cropland scarce.

Source: UN
The old stencil process and the modern Xerox, for images, may become possible for real things, says S. Santhanarayanan

CREATING copies has many uses — one area is in images and documents, another is in the natural world, of biological reproduction. A group of scientists at New York University has made progress in mimicking the biological method for replicating molecules or artificial, nanometer-size structures. "Our findings raise the tantalizing prospect that we may one day be able to realise self-replicating materials with various patterns or useful functions," say Nadrian C. Seeman, Paul M. Chaikin and others of the Center for Soft Matter Research at NYU in a paper just published in the journal Nature.

The work of Crick and Watson laid bare the elegance and ingenuity of the genetic code, both in function as well as the manner of its replication in the reproduction of living organisms. Each living cell contains, in its nucleus, a mega-molecule, the DNA, a string of triplets of just four basic molecular units. Each triplet forms the template for the synthesis of a specific amino acid, the building block of proteins.

As each unit in the triplet can take four forms, there can be 4^3 = 64 distinct triplets. But with provision for redundant forms in some housekeeping, the code describes only 20 amino acids, whose sequence in the DNA can define millions of proteins. The DNA thus contains the information for all processes and functions in an organism and makes for the complex yet exact and distinct construction of the enormous number of living species.

The definition of the four basic units to describe the amino acids also serves to enable the DNA to both remain stable and to replicate during reproduction of the cell. The act of reproduction, in fact, is nothing but the replication of DNA. The four basic units of the DNA, called A, T, G and C, have the property of attaching to each other, but in specific pairs — A with T and vice-versa or G with C and vice-versa. Thus, if there is a string, say, A, T, C, T, G, as part of a strand of the DNA molecule, then each unit would attach, from the chemical soup within the cell, with units T, A, G, A, C as ... complement of the original string. In this way, the millions of units in a full DNA string would have a complementary string alongside, and the two strings are joined at these pairs, right along their length, in the form of a helix.

One feature of the bonding is that the bond of the units along the length of the DNA is stronger than the bond of A to T and C to G, as complements. Thus, when the chemical signals of the time for a cell to divide are present, the lateral bonds between the strands of the DNA molecule separate but the backbone, which is bound by stronger ties, stays intact. And the two parts of the dividing cell carry away one strand each. As the units of each strand code for the corresponding matching unit, the single strands in the newly formed cells rapidly replace the missing, complementary units, which form bonds between themselves and the two parts of the DNA molecule are complete again, for the cell to function normally!

These two cells can again split into two more, and the resulting four cells into another eight and so on, which can lead to very fast growth of tissue through cell division.

This elegant and simple method employed by living things holds out the prospect of using molecular templates for the generation of substances. Just as sequences of triplets in the DNA code for specific proteins, we now have methods to build strands of molecules of substances in the form that would be capable of picking out components and assembling complex molecules. But equally attractive is the possibility of creating ways for existing molecules or materials to create copies of themselves, ideally, at the expanding rate of tissue growth. The work of Seeman, Chaikin and others is a first step in realizing replication — through the use of components made of a combination of DNA segments.

The components used were a pair of only two molecular tiles, say A and B, to create a simple mosaic, like AABABA. The objective was to get this string to attach to a complementary string, ABBABA, picking up the complementary units and assembling the string from the chemical environment.

In the experiment, the tiles were first separately formed from the constituent DNA segments, with ends fashioned so that the tiles would attach in a particular order, like ABA, in the example. When the tiles prepared like this were mixed, and they formed strings, a chemical marker was added to identify the "A" and the sequence order was verified with the Atomic Force Microscope. In the meantime, the complementary tiles, the "A" and the "B" were also prepared. Then these were mixed with the "seeds" strings, each complementary tile joined its counterpart and formed the "duster" string. As in the case of natural DNA, the longitudinal adhesive was kept stronger than the lateral ties. Gentle heat could then separate the pairs of strings and a magnetic bead could be attached to one end of the "Substrings". The Atomic Force Microscope then verified if the replication was accurate.

The results showed a 70 per cent accurate creation of daughters. The next step was the creation of "grand-daughters", or the replication of the daughters using the first set of tiles as components. As the initial strings were not separated before the "second generation", separate markers were added to the second generation tiles for identification. The result was a similar level of creation of accurate "grand-daughters", which then added to the number of the initial strings. Further generations would hence create larger numbers, as a growing progression.

The process demonstrates that in principle replication is still not the runaway expansion of natural systems. But it does demonstrate that replication is possible, not just of DNA but of more complex forms, carrying information, shape and, conceivably, function. "We expect that...and other improvements will deliver a robust replication method that is applicable to molecular, nanometer-sized and colloidal systems displaying programmed recognition," say the authors.

The writer can be contacted at simplescience@gmail.com
With the Graduate Aptitude Test in Engineering (GATE) exam just a few months away, aspirants are busy with last-minute preparations to make it to top engineering and science institutes. There are a million applications for this exam in 2012, says SANGEETA YADAV

There is an increased scope in job prospects for those who have pursued engineering and science subjects. "We have already witnessed a record number of applicants who have applied for the Graduate Aptitude Test in Engineering (GATE) this year. Last year, around six lakh people appeared for the exam but this year, more than a million people have registered themselves so far. One of the possible reasons for this upcoming trend is due to the decision taken by many Public Sectors Units (PSUs) of recruiting directly through GATE results. Moreover, it is found that majority of post-MTech students are well placed," Professor Jagdish Kumar, organiser for GATE, tells you.

ABOUT THE EXAM
The exam is all India and conducted jointly by the Indian Institute of Science (IISc) and eight Indian Institutes of Technology (IITs) on behalf of the National Coordination Board — GATE, Department of Higher Education, Ministry of Human Resource Development, Government of India. The main aim of this test is to identify suitable candidates for research and research purposes.

IITs and IISc always try to innovate and introduce new systems to test the basic knowledge of candidates in various fields. As a part of that innovation, this year many new changes have been made in GATE 2012. "In GATE 2012, there are 21 papers out of that six papers will be online. Last year, we had four online papers — Geology and Geo-Physics (GG), Aerospace Engineering (AE), Textile Engineering and Fashion Technology (TF) and Mining Engineering (MN). For the test this year we have introduced two additional papers which will be conducted online — Architecture and Planning (AR) and Agricultural Engineering (AG). Scholarship is available for the needy students. Last year more than 15,000 students availed the scholarships," says Professor Jagdish.

In the new format, online papers will have questions of multiple choice type and numerical answer type. For multiple choice type questions, each question will have four choices for the answer. For numerical answer type questions, each question will have a number as the answer and choices will not be given. Moreover, the sale of application forms through banks and GATE office counters and sending admit cards by post to the candidates have been discontinued in this new format. The candidates need to register and fill the application online only by accessing the GATE websites of IISc and eight IITs. Also the admit card can only be downloaded from the Zonal GATE websites from 2nd January 2012 onwards. The pre-final year students are not eligible to write GATE 2012.

Public Sector Units like Bhabha Atomic Research Centre, Nuclear Power Corporation of India Limited and Hindustan Aeronautics Limited, will be giving more importance to GATE scores for various job positions in their organisations.

According to experts it is not easy to crack. "The exam is very tricky. Although three to four months of dedicated preparation will lead the students to a good rank. The concept matters a lot and the basic should be clear. One should solve mock papers. Numericals are very difficult and for every wrong answer there is negative marking. Questions are inter-related and if your answer is incorrect the other will automatically gets wrong," says Sakshi Kohli, one of the top rank holders of exam and a PhD student at IIT, Delhi.

FOR THOSE WHO CRACK TEST
Qualified students get opportunities such as attractive scholarships, assistantship for undergraduate study at some of the best engineering institutes in India. There are several engineering colleges and institutes that specify GATE as an obligatory qualification even for admission of students into post-graduation programme. In addition to options waiting such as M.Tech, M.Sc. and M.Phil, GATE qualified candidates also become eligible for the award of junior research fellowship in Council of Scientific and Industrial Research Laboratories.

SCOPE
After qualifying GATE, candidates will get to explore more education avenues for further evaluation. M.Tech degree is mandatory to qualify for faculty or research positions in educational institutes or research and development centers. One can also work as plant engineers, manufacturing engineers, quality engineers, process engineers and industrial managers in different industries, management and service sector in the middle-management cadre. PSU's like BARC (Bhabha Atomic Research Centre), Nuclear Power Corporation of India Limited (NPCIL), Hindustan Aeronautics Limited (HAL) etc give importance to GATE scores for various job positions in their organisations.

ELIGIBILITY
• Bachelor’s degree or post-graduate diploma holders in IISc, engineering or technology or architecture and those who are in the final year of such programmes.
• Master’s degree holders in any branch of science, mathematics, statistics, computer applications or equivalent and those who are in the final year of such programmes.
• Candidates with qualifications obtained through exam conducted by professional societies recognised by UGC/AICTE (AMIE by Institute of Engineers (AMIE)) as equivalent to BE/BTech are eligible to apply for GATE 2012.

EXAM STRUCTURE
The exam consists of a single paper of 3 hours duration which contains 65 questions carrying a maximum of 100 marks. The question paper will consist of only objective questions. The pattern of question papers is given in Section 4. Each paper shall have a General Aptitude component carrying 15 marks.

IMPORTANT DATES
• Last date for submission of online application — October 31, 2011
• Last date for receipt of printed version of online application — October 28, 2011
• Online exam — January 29, 2012 (9 am—12 pm & 2 pm—5 pm)
• Offline exam — February 12, 2012 (9 am—12 pm & 2 pm—5 pm)
CAT: Rise after a drop

Why has the number of CAT 2011 applicants increased (though marginally) after last year’s dip?

The number of registered candidates for the Common Admission Test (CAT), the entrance exam for the Indian Institutes of Management (IIMs), has increased. In 2010-11, the number of applicants was 174,000, while in 2011-12, it rose to 180,000. This is the first year when the number of applicants has increased, though marginally.

According to the assorted sources, the number of male applicants has increased by 40% in the last two years. The number of female applicants has increased by 25%.

Cracking it verbally

With the CAT just around the corner, here are some basic preparation tips.

With the Indian Institutes of Management (IIMs) around the corner, you can base your final verbal preparation on two basic premises:

- Accuracy of 70% is good (really good in fact)
- It is always more the matter of trying and solving the questions

CAT has traditionally been a Reading Comprehension (RC)-centric paper. Hence, this the pivotal area for ensuring success in the verbal portion. The number of questions varies from three to four, with three or four questions per passage. There are a few critical factors in RC preparation. Here are some tips:

- Firstly, don’t take more than eight to ten minutes per passage and ensure that all questions are looked at, with the additional rider that all verbal ability and reasoning questions have to be attempted.
- The key to preparation is reading on diverse topics.
- Various websites like www.magosarty.com give theme-based articles to read and will help build up your repertoire.
- Frame all direct questions followed by partially inferential inquiries. Questions with the ‘except’ clause or with lengthy answer choices should be avoided as they tend to be quite difficult.

Verbal ability

This includes paragraph and paragraph completion questions. Here’s what will help:

- Identify the introductory statement, which will give you a gist of the paragraph.
- Then identify facts that will connect to the next sentence. These connections can be considerations that, and, or, etc. can be context connectors like mass-effect, generic to specific, etc.

Critical reasoning

This year’s CAT is likely to have questions from the critical reasoning section. There are questions which typically appear in the Graduate Management Admission Test (GMAT) and have also been asked intermittently in the CAT. These involve:

- Strengthening and weakening an argument
- Identifying flaws in the argument
- Justifying logical fallacies
- There are no shortcuts to learning a language and practice is the key to success.

Read up on theme-based articles, go to www.magosarty.com for tips.
Discussing CAT paper can land you behind bars

Shaswati Das
shaswati.das@hindustantimes.com

NEW DELHI: Discussing your Common Admission Test (CAT) questions can land you behind bars. Students appearing for CAT this year will have to weigh very carefully what they talk outside the examination hall as any discussion on the day's question paper will not only result in imprisonment, but a heavy fine of up to ₹2 lakh.

"If any candidate discloses, publishes, reproduces, transmits, stores, or facilitates transmission and storage of the contents of the CAT in any form or by any means, they shall be violating the Indian Contract Act, 1872 and/or the Copyright Act, 1957 and/or the Information Technology Act, 2000. Such actions may constitute a cognisable offence punishable with imprisonment for up to three years and fine up to ₹2 lakh," said Janaki Raman Moorthy, Convenor of CAT 2011.

"There is secrecy only in terms of the test content which is important for protecting IIMs' intellectual property. We will take the necessary measures to monitor these disclosures," added Moorthy.

Those taking CAT will have to agree to a Non-Disclosure Agreement (NDA) at the time of the test, which prohibits them from disclosing or discussing any test content after the exam. While the NDA was brought into effect in 2009, it was found that several students violated it.

Nearly 2.05 lakh students will be appearing for the test this year. The question that arises is, how will the IIMs monitor these discussions across the country.

Also, following the Supreme Court's (SC) judgment, which states that examination answer sheets must be made public under the Right to Information (RTI) Act, this move by the IIMs is likely to be challenged by the public.

"The IIMs' decision may be seen as a conflict to that judgment. So enforcement of the NDA can be difficult here. If they attempt a mass prosecution of students, it will most likely be challenged," said Sumathi Chandrasekharan, a lawyer.
OZ TO ACCEPT PTE ACADEMIC SCORES

HT Education Correspondent

Pearson has announced that the Australian Department of Immigration and Citizenship (DIAC) will soon accept Pearson Test of English Academic scores submitted with student visa applications, following the formal approval of the test in May this year. PTE Academic scores are likely to be accepted from November 5, 2011.

DIAC will require students to achieve minimum PTE Academic scores ranging between 29 and 50 at Assessment Levels 3 and 4, depending on their nationality, education sector and the terms of their study in Australia.

PTE Academic is already accepted by more than 150 institutions in Australia which ask for proof of English language proficiency as part of their admissions criteria for international applicants. The test is accepted by more than 2800 academic programmes worldwide and is already approved by a number of government agencies including the UK Border Agency, which accepts the test for Tiers 1, 2 and 4 (student) visa applications. It is expected that the demand for PTE Academic will increase further once DIAC starts accepting scores. Pearson has responded to this by creating additional session availability in countries such as China, India, and Nepal.

7 in IELTS = 94 in TOEFL

Oz to accept equivalent scores for visas.

After approving the TOEFL for student visas in May 2011, Australia has now accepted the test score equivalencies identified by ETS research for the test when compared to International English Language Testing System (IELTS) scores. The new score equivalencies are likely to come into effect on November 5, 2011. The Department of Immigration and Citizenship will also accept Pearson Test of English (PTE) Academic scores submitted with student visa applications.

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Also see page 6
Membrane function & the impact of molecular biology

Studies reveal that cells in the human body need more than 30 families of membrane proteins to facilitate transportation of the great variety of solutes that must be moved across membranes.

BIOLIGICAL membranes play a crucial role in dividing the boundaries of the cell and its components, serve as a list of specific functions, protein transporter proteins that facilitate and regulate the movement of substances into and out of the cell and its components, contain the transporters required for the direction of external signals, and provide mechanisms for cell-cell communication.

One of the most obvious functions of membranes is to define the boundaries of the cell and its components and serve as permeability barriers. The interior of the cell must be physically separated from the surrounding environment not only to keep undesirable substances out but also to keep undesirable substances out. Membranes serve this purpose well because their hydrocarbon interior is an effective permeability barrier for hydrophilic molecules and ions. The permeability barrier for the cell as a whole is the plasma (or cell) membrane, surrounding the cell and regulating the passage of materials both into and out of cells. In addition to the plasma membrane, various intracellular membranes serve as compartmentation functions within subcellular organelles.

Membrane proteins have specific associated functions because the molecules and structures responsible for these functions — transport, in most cases — are either embedded in or located on them. One of the most useful ways to characterize a specific membrane, in fact, is to describe the particular proteins, transporters, receptors, and other molecules associated with it.

For example, many distinct enzymes are present in or on the membranes of chloroplasts such as the stroma-located phosphoribulokinase (ER), which catalyzes the initial steps in the Calvin cycle. Membrane-associated enzymes are often useful in mechanistically understanding metabolic processes because the active sites of these enzymes are often located on the membrane surface or in the membrane bilayer.

Membrane proteins mediate the same variety of cellular functions and are therefore of great interest to cell biologists. Only within recent years, however, have the studies of membrane proteins led to definitive insights and answers. Some of these questions have come from the application of biochemical techniques to membrane proteins. Several such approaches include 2D-electrophoresis gel electrophoresis, proteomics analysis and other techniques for studying membrane proteins with radiolabels or fluorescent labels, and two other biochemical approaches that can be used to study transport: labeling and transport measurement. Affinity labeling utilizes radioactive analogues that bind to specific membrane proteins, allowing for the identification of the proteins. The other approach is to use a compound called cycloheximide, which inhibits the synthesis of new protein. Membrane proteins that have been exposed to cycloheximide are, therefore, likely to contain radioactively labeled specifically to the proteins involved in glucose transport.

Membrane proteins mediate the formation of specific membrane proteins from specific, prehydrophobic components. In this approach, proteins are inserted into membranes with integral solutions and then separated into their individual protein components. The purified proteins are then mixed together with phospholipids under conditions known to promote the formation of membrane vesicles (liposomes). These reconstituted vesicles can then be studied for their ability to carry out specific functions that are known, or thought to be mediated by membrane proteins.

Biochemical techniques, that work with soluble proteins are also often useful with proteins that are hydrophilic. Within the past two decades, however, the study of membrane proteins has been revolutionized by the techniques of molecular biology, especially DNA sequencing and mass spectrometry.

While these techniques have the potential to lead to a better understanding of the functions of membrane proteins, it is not yet easy to determine the number of sequences of the membrane for which a single clone can be obtained. Moreover, most of the sequencing procedures is carried out quickly and automatically by DNA sequencing machines. Once the DNA for a particular membrane protein has been sequenced, the expression, purification, and purification of the proteins can be used to identify proteins that are expressed in the cell and to clone and identify the genes that encode the proteins. Analyses identifying the oligopeptide sequences that bind to specific membrane proteins, therefore, allow for the identification of proteins that correspond specifically to the specific segments of the membrane. The writer is associate professor and head, Department of Botany, Azania Mohan College, Kolkata.

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Learn in the USA

With a surge in the number of Indian students in the last few years, American institutions are also trying to reach out to them in a big way.

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Like several students across the globe, 20-year-old Rhea Munjal dreamt of going to the US for higher studies. Her dream turned into reality when she enrolled at Ohio State University (OSU) this year.

"I am pursuing a master’s in law at OSU. There are 10 students from other countries at Ohio and I’m the only Indian. I thought of heading to the US for further studies as it is home to some of the best institutions in the world," she says.

Munjal is among the surging number of students heading to the US in pursuit of a qualification from an American institution. In 2010, Indian students constituted the second largest group of foreign students studying in the US, with nearly 1.05 lakh students.

Besides the popular universities such as Columbia, Harvard, Princeton, and Stanford, there are several others that offer great scope to foreign students.

The US, with more than 4,000 accredited institutions of higher learning, offers access to high-quality education to students in a broad range of fields. Thirteen of the US institutions have been ranked in the top 20 of the recently-released QS World University rankings.

American institutions are also trying to reach out to Indian students through education fairs and other events. Recently, officials from 21 institutions from more than 15 states in the US, visited India to interact with prospective students as part of the US Department of Commerce US Education Mission to India.

These included officials from the Arizona State University, West Virginia University and University of Pennsylvania. Students were upbeat after learning about the new study options.

"I want to pursue a master’s or a PhD in biological sciences for which I have zeroed in on the University of Pennsylvania and University of Illinois. I plan to go to the US because it has the best of faculty and teaching methodology," says Patiala-based Madhu Smita, who holds a master’s in biotechnology.

Sankalp Choudhary, who hails from Dhanbad in Jharkhand, plans to study for a law degree. "With the large number and variety of colleges and universities in the US, I’m trying to find one that matches my needs and interests," he says.

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STUDY OPTIONS

- Harvard University
  http://www.harvard.edu/
- Massachusetts Institute of Technology
  http://web.mit.edu/
- Yale University
  http://www.yale.edu/
- University of Pennsylvania
  http://www.upenn.edu/
- Columbia University
  http://www.columbia.edu/
What America needs

The final part of an analysis on how USA can woo students

Continued from page 1

However, a complex interplay of variables will make it difficult to predict where this growth will go.

As we have seen, the influence of unpredictable events like 9/11 and the recession on student mobility is far-reaching and global. In addition, government policies related to visa requirements, specifically those concerning financial requirements and post-education work opportunities, will have a big influence on student mobility.

Competitive pressures will also help alternative models of student recruitment like agents and pathways programmes to grow.

However, the adoption of these models will not be without risks, pitfalls and conflict. For example, the agent model continues to raise questions about the integrity of admissions processes, especially with relation to document fraud.

It is ironic that the agency model, which facilitated numerous visa frauds in Australia and the UK and prompted their governments to act to restrict student mobility, is now being viewed positively in the US. These models will certainly help to increase student mobility, but they will bring greater risk for institutions and nations.

International student mobility is a source of enrichment and advancement for institutions, students and nations. The future outlook looks positive for increased numbers of international students, but competition will also become fierce, which will make the picture less predictable.

Institutions and nations that can adapt to the changing environment will be best placed to make the most of the opportunities and uncertainties involved.
Caltech has ended the eight-year reign of the big brand Harvard

Jubilant: Isn't it a handy feeling to study at an institute ranked No 1 globally?

The relatively 'smaller' institution in a California city has ended the eight-year reign of the big brand Harvard University in the recently released 2011-12 Times Higher Education (THE) World University ranking. (Stanford University is tied with Harvard at No. 2 among the 400 institutions worldwide.)

Pasadena-based California Institute of Technology, or simply Caltech, climbed to the top slot with a total score of 94.8 against Harvard's 93.9. In last year's THE ranking, the topper Harvard garnered 96.1 and Caltech, at No. 2, 96 - a gap of just 0.1.

The THE ranking is based on 13 performance indicators, grouped into five areas: research - volume, income and reputation (30%), citations - research influence (30%), industry income - innovation (25%) and international outlook - staff, students and research (25%).

"This year, Caltech pips Harvard with marginally better scores for research - volume, income and reputation, research influence (measured by paper citations) and (most substantially) the income it attracts from industry. Harvard just beats Caltech for the quality of its teaching environment," Phil Baty, editor, Times Higher Education World University Rankings, wrote in his analysis on the THE website.

"With differentials so slight, a simple factor plays a decisive role in determining the rank order: money." On the teaching score, Harvard bagged 96.8 and Caltech, 95.7. While the 96.8 score Harvard is more renowned for law, Caltech's forte is pure sciences and technology. Though it has an enrolment of just 2,773 (first term 2010) students, its solid CV features, among other distinguishing accolades, 22 Nobel prizes (Harvard: 44).

Started in 1891, it is home to discoveries and inventions such as the Richter scale (used to measure earthquakes), left brain/right brain (that the brain's two halves have different capabilities), the nature of the chemical bond and the recommended daily adult requirement of Vitamin A, B, C and D.

An Indian student couldn't seem to stop raving about it. "I did my masters from the Indian Institute of Technology at Kharagpur and received my doctoral degree from the Tata Institute of Fundamental Research, in India. Living with world-renowned scientists and celebrated personalities, hence, was not something new for me. But, working at the topmost institute in the world, sharing waves with many Nobel laureates, still made me nervous," says Nikhil J Joshi, who joined Caltech's biology/computation and neural systems division as postdoctoral fellow about seven months ago.

"I am completely overwhelmed by the dedication and honesty (of the student) towards good science, and ample positive attitude and confidence in finding solutions, irrespective of the toughness of the problem. You might know that Caltech works purely via trusting an honour code and very little by imposed vigilance. It helps develop a fresh, friendly and comfortable, but sincere atmosphere. Here in my lab, we like challenging each other, gauging about each thought or concept. And, that's the way we all evolve healthy!"

"It makes me immensely proud to be at THE best institute, at the rise of one's
गर्लफ्रेंड के इनकार पर आईआईटियल ने दी जान

19 Oct 2011, 04:00 hrs IST, नवभारत टाइम्स

बस गोविंदपुरी
कालकाजी स्थित गोविंदपुरी में सोमवार रात 25 साल के एक युवक ने पंजे से लटकर आत्महत्या कर ली। युवक की पहचान अभिषेक नाफिल ने चुका था और सिविल सर्विसेज की तैयारी कर रहा था।

पुलिस के मुताबिक मुत्तक आगरा का रहने वाला था। पुलिस के मुताबिक गर्लफ्रेंड ने शादी से इनकार किया जो वह विवेश व्यक्ति था। पुलिस को घटनास्थल से एक मूल्यवान नोट बरामद हुआ। पुलिस सुझाव दिया कि अभिषेक आगरा से दिल्ली आकर बहादुर गलौं पंजेर 4 में किए गए कार्रवाई में रहता था। आईआईटियल दिल्ली से 2008 में दीवान करने के बाद यहां साल श्रेय पहले आईआईटियल की तैयारी में जुट गया। उसने मुरादखाना नगर में करीब एक साल पहले आलिया नें शुरू कर दी। वहां उसके पहचान एक लड़की से हुई। देखते ही देखते दोस्ती रिलेशनशिप में जल गई। पुलिस ने धारा कि लड़की ने अभिषेक के सामने शर्त रखी कि अगर वह कुछ बन जाएगा तो उससे शादी कर लेगी। कुछ दिन पहले एक कंप्यूटर एंज्यूस्मा के दूसरे राउंड का अभिषेक के पास कोस आया। पुलिस के मुताबिक अभिषेक ने जब अपनी गर्लफ्रेंड को इस बारे में बताकर शादी का प्रस्ताव रखा तो उसने कहा कि वह किसी और से रिलेशनशिप में है। इसके बाद अभिषेक ने आत्महत्या कर दी।