

## **Indian Institute of Technology Bombay**

### **Report of the Senate Subcommittee on UG Entrance (03 May 2012)**

A Senate Subcommittee was constituted by the Chairman, Senate to look at the future model of UG entrance to IITs in view of the Ramasami Committee report and to prepare a report by 30th April 2012, for presentation to the Senate for discussion and for eventually forwarding the view of the Senate to MHRD. The committee members are

Prof. C. V. Tomy, Physics  
Prof. K. Narasimhan, MeMS  
Prof. A. V. Mahajan, Physics  
Prof. Avijit Chatterjee, Aerospace  
Prof. Anil Kumar, Chemistry  
Prof. S. S. Major, Physics  
Prof. A. K. Pani, Mathematics  
Prof. D. K. Sharma, Electrical Engg. Dept  
Associate Dean AP  
Dean AP (Convener)

The Subcommittee held its first meeting on 18<sup>th</sup> April. After going through the inputs received from the faculty members and the various documents related to the recent proposals on UG admissions, an interim report was prepared, circulated and discussed in IFM. After further deliberations in subsequent four meetings, the recommendations were finalized on 30<sup>th</sup> April 2012.

## **Recommendations for UG Entrance to IITs**

Admission to IITs is proposed to be carried out through a two-stage process. The proposed National Test for entrance to Engineering Institutions will be used as the first stage for the purpose of screening. For the students selected through this stage, IITs will conduct a separate second stage test for admission to IITs. All eligible students, including, diploma holders and foreign students will go through the same admission process.

### **A. The First Stage Test**

1. The number of candidates selected by the First Stage Test will be about 5 times the total number of available seats in all the IITs.
2. Use of National Test for the purpose of screening will require that the merit list and the database of screened candidates are made available to IITs by the end of April.
3. IITs can provide the required academic support for the proposed National Test.

### **B. The Second Stage Test - JEE**

1. The candidates selected through the First Stage Test will be eligible to appear in the Second Stage Test (JEE) only for that particular academic year, which will be held in May every year.
2. The merit list for admission to IITs will be based solely on the performance in the Second Stage Test.
3. JEE will be conducted by IITs as a subjective type test based on conceptual understanding, analytical thinking and problem solving abilities. It will consist of separate sessions for Physics, Chemistry and Mathematics.

### **C. Role of Class XII Board Performance in Admission**

1. Performance in the Board examination will be used only as an eligibility requirement for admission to IITs.
2. At present, we do not consider it feasible to give weightage to Board performance in the preparation of merit list for admission. This may be reviewed and considered at a later stage.

### **D. Year of Implementation**

Given the changes being proposed in the examination style, the scheme should be implemented from 2014 onwards.

## Explanation

### 1. Preamble

MHRD's concern on multiplicity of entrance examinations for engineering institutions, increasing stress on aspiring students, neglect of school education system and growing dependence on coaching are genuine and timely. It is also heartening to see that efforts are being made to find solutions to these problems, with a national perspective in mind. Though it is not stated explicitly, there is a feeling in certain quarters that the above problems are rooted primarily in the present structure of JEE. This is debatable. Only about 10% of class XII students who appear for JEE cannot be held responsible for all the ills of the school education system. However, this perception has gained credence, especially due to the large increase in JEE aspirants during the last 5-6 years (~500 %), to the current level of over 5 lakhs. Given that there are only 10,000 or so seats available in IITs, this implies a disproportionately large aspiration ratio of 50:1. Many of these aspirants, mostly from urban and semi-urban centres, are engaged in high intensity JEE coaching in various parts of the country at exorbitantly high costs and they visibly appear to neglect school education. It is also felt among certain sections of IIT faculty, that there is a perceptible degradation in the academic quality of students selected through the present JEE system. It is, therefore imperative that IITs take note of these issues and proactively participate in arriving at a workable solution.

At the outset, it may be mentioned that the solution to above problems needs to be two-fold.

- i) IITs being premium educational institutions of the country must be able to select the best available talent in the country.
- ii) The large number of students (currently about five lakhs) competing for the 10,000 IIT seats should be reduced to a much smaller number. This will enable the other students to realize their true potential through alternative endeavours.

### 2. Feedback on the MHRD Model

#### 2.1 A Common Single Stage Test for IITs and Other CFTIs

Although it is agreed that the ever increasing multiplicity of engineering entrance tests is becoming a national menace, it may be too stressful for all the students of the country, coming from diverse backgrounds, to undergo a 'single' test for admission to nearly all the reputed engineering institutions. Incidental poor performance or a medical problem on a particular day or just an 'off day' can adversely affect the student's prospects for his/her whole life and career. Choice of a few (3-4) entrance tests for differently staked groups of engineering institutions is, therefore, more desirable to give back-up choices to the students.

#### 2.2 Weightage to Class XII Board Performance in Admission

The spirit behind giving weightage to the Board performance of students is to be appreciated. The difficulty in its implementation is the heterogeneity in syllabus, instructions and evaluation process in various Boards in the country which makes normalization across the Boards infeasible. A hasty implementation is likely to have the following negative implications.

- (i) Giving weightage to Board performance for an admission process with high stakes may make the Board exams highly vulnerable to unfair practices, including impersonation, which may not be easy to control with their limited resources.

- (ii) It will encourage proliferation of 'integrated coaching schools' in urban centres, starting as early as class 6-7 level and demanding exorbitantly high fees. This development will not only be further detrimental to the quality of basic school education but will also result in strong negation of inclusivity on all counts.
- (iii) In case a normalization formula is implemented, its procedural viability and legal tenability will be subjected to a stern test, owing to the high stakes in IIT admission. There is a potential danger that due to these procedural reasons, the complete engineering admission process of the country can become chaotic or may even be brought to a halt due to litigations.

### **3. Justification of the IITB Model**

Admission to IITs is proposed to be carried out through a two-stage process. The first stage will facilitate the selection of about 50,000 JEE aspirants who will prepare for the second and final stage JEE. These 50,000 screened candidates will get at least one month or so after Board examinations to prepare for the second stage JEE.

#### *3.1. First Stage Test*

A national level test is being proposed for CFTI's. IITs will be happy to provide academic support for this. IITs will use it as their screening test subject to the availability of its results by the end of April.

#### *3.2. Second Stage Test - JEE*

The second stage subjective test (JEE) for 50,000 candidates will be conducted by IITs to evaluate the depth of conceptual understanding, analytical thinking and problem solving abilities, and hence, their aptitude and potential for academic engagement at the frontiers of science and technology. It is important to limit the examinees to a reasonable number, so that the conduct of this important stage of IIT entrance examination and its evaluation process can be carried out with diligence and uniformity, given the constraints of available human resources and time.

#### *3.3. Role of Class XII Board Performance*

- Performance in board examination will be used as an eligibility requirement for admission to IITs.
- At present, IITs do not consider that it is feasible to give weightage to Board performance in the preparation of merit list for admission. This may be reviewed and considered at a later stage.

#### *3.4. Year of Implementation*

Given the changes being proposed in the examination style, IITs will need time for extensive preparation for adopting the new procedure for pre-selection and for the final subjective test. The students also need due notice to prepare for this exam. In view of this, it may not be possible to implement this scheme from 2013. We recommend that the scheme be implemented from 2014.