

Admission to IISERs: why 2009 cut-off marks for 2010 applicants?

The Indian Institutes of Science Education and Research (IISERs) are a premier group of institutions started by the Government of India at Bhopal, Kolkata, Mohali, Pune and Thiruvananthapuram. These institutes were started to give a boost to science teaching and research at the B Sc/M Sc level in the country. Their main teaching programme is the 5-year integrated M Sc in natural science subjects (Maths, Physics, Chemistry and Biology) with a bit of humanities and social sciences subjects added to the cur-

riculum for well-rounded training. Until last year, IISERs were admitting students after class XII based on the Kishore Vaidyashiksha Protsahan Yojana selection of the Department of Science and Technology, and those students whose names appear in the main/regular list of IIT-JEE entrance test. This year IISERs have added a third category for admission based on Board exam rank (see <http://www.iiser-admissions.in/>). It is this new category, called Direct Admission, that is the subject of this note.

The Joint Admissions Committee (JAC) of IISERs decided that the top 1% students of every Board in the country will also be eligible to apply this year. This channel will open on 15 June 2010. Now to arrive at the cut-off percentage for each education board for the top 1%, the website of the IISER admissions gives a link to the table of cut-off marks. One finds that the cut-off marks given are for 2007 and 2009 of class X and class XII. The Joint Admissions Chairman at IISER-Kolkata informed that the previ-

Table 1. Percentage cut-off marks[#] of various state-boards result in class XII for 2007, 2008 and 2009, and in class X for 2005, 2006 and 2007. Data taken from INSPIRE advertisement of DST. Colour coding is added

Board	Percentage cut-off marks in class					
	X for 2005	XII for 2007	X for 2006	XII for 2008	X for 2007	XII for 2009
Andhra Pradesh	89.5	97.0	90.8	81.2	91.1	82.3
Assam	89.0	80.4	88.3	75.2	77.6	73.4
Bihar	72.3	63.3	73.4	66.7	73.2	73.4
Chhattisgarh	81.2	88.4	82.0	81.0	82.5	85.0
Goa	84.5	77.1	85.6	76.3	85.8	81.8
Gujarat	84.7	88.0	89.3	83.0	86.4	77.8
Haryana	96.2	84.8	84.0	82.6	87.0	82.6
Himachal Pradesh	89.0	75.0	78.9	78.2	76.3	79.4
Jammu & Kashmir	77.8	72.2	77.0	79.4	84.4	79.2
Jharkhand	74.4	65.8	75.4	67.8	78.4	67.2
Karnataka	89.9	82.3	72.2	85.5	89.6	88.0
Kerala	76.0	88.8	77.0	91.7	93.9	91.8
Madhya Pradesh	82.6	78.6	84.8	82.8	85.8	82.6
Maharashtra	86.3	80.2	86.9	89.0	80.1	83.8
Manipur	70.0	74.6	73.0	75.2	77.0	75.8
Meghalaya	75.7	77.2	69.0	73.2	70.5	70.6
Mizoram	87.2	74.0	93.4	71.8	86.6	68.2
Nagaland	77.0	67.3	71.5	71.7	68.1	73.0
Orissa	81.3	72.9	81.3	71.0	81.3*	76.1
Punjab	76.2	76.8	76.2	79.6	81.3	76.7
Rajasthan	80.2	77.8	81.5	78.3	79.1	82.4
Tamil Nadu	90.8	93.3	91.0	94.0	90.4	94.5
Tripura	70.0	74.2	82.6	70.0	68.8	68.8
Uttar Pradesh	71.0	73.6	71.2	69.2	72.5	72.6
Uttarakhand	71.7	70.6	68.3	75.2	70.4	68.2
West Bengal	83.5	79.4	84.6	80.6	86.6	82.2
CBSE	91.2	91.2	93.0	91.0	93.6	92.4
ICSE	94.7	92.6	94.0	93.0	95.6	93.3
Viswa-Bharathi	92.8	93.9	92.1	91.0	93.4	95.8

*Due to non-availability of data, last year's value has been used now as cut-off eligibility.

$$\% \text{ cut-off marks} = \frac{\text{Total marks obtained}}{\text{Maximum possible marks}} \times 100$$

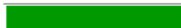






Colour coding of cut-off marks

%age difference (+/-) compared to previous year

> 5%	Red
1-5%	Green
< 1%	Blue

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Table 2. Number of boards as a function of variation in marks year-on-year. Last two columns, i.e. 2007 class X and 2009 class XII are considered which will apply for 2010 admissions to IISERs in June–July

Colour codes	No. of boards	Education boards
	2	Madhya Pradesh, Tamil Nadu
	7	Andhra Pradesh, Chatisgarh, Haryana, Jharkhand, Manipur, CBSE, ICSE
	7	Himachal Pradesh, Meghalaya, Nagaland, Rajasthan, Uttar Pradesh, West Bengal, Viswa-Bharathi
	4	Bihar, Goa, Jammu & Kashmir, Kerala
	7	Assam, Gujarat, Karnataka, Mizoram, Punjab, Tripura, Uttarakhand
	1	Maharashtra
	1	Orissa (excluded)

ous year's cut-off are being used because the data for this year (2010 class XII results) will take some time to come by and tabulate. This sounds highly arbitrary and illogical because there will be fluctuations in highest marks (and hence cut-off marks) in a Board result year-on-year. When this point was mentioned to JAC, the reply was that they are aware of these fluctuations and yet in the nature of a practical solution, IISERs will apply previous year's cut-offs. I obtained the table of cut-off marks for the last three years for all X and XII class Boards from DST website (<http://www.inspire-dst.gov.in/Inspire-Advertisement.pdf>). The same data are reproduced in Table 1. According to the prescribed norms, a student who is in the top 1% of his/her board at X and XII class level exams written in 2008 and 2010, can apply to IISERs after 15 June. However, the cut offs for 2007 and 2009 will apply (last two columns of Table 1). In order to assess variation in cut-off marks year-on-year, and in effect test the validity of statistical model being applied by IISERs, I have colour coded the marks in three categories: <1% (green), 1–5% (magenta) and >5% (red). Because only the top 1% students at both X and XII class are eligible to apply, the margin for variation must be small to use the previous years' cut offs. The last two columns are green for only two out of the 29 boards listed, Madhya Pradesh and Tamil Nadu. The method being used appears questionable to apply (see Table 2) for many boards covering thousands of students. Using 2009 cut-off for 2010 entrance can have unpredictable and arbitrary consequences for applicants

across the country. I use 2008/2009 numbers to illustrate the point since this year's cut offs are not known to me. A board in which the cut off increases by say 3%, e.g. Karnataka will allow students well into top 5% (and perhaps more) to be eligible. Conversely, a board in which the cut-off falls (because the highest mark is slightly lower this year) will not have any eligible applicants, say Maharashtra students will be completely eliminated. The reader should note that this is not a real situation for 2010, but a mere projection of how things might happen if the present model is adopted. Table 2 shows that there is no correlation between cut-off marks in a given Board year-on-year. This is not surprising because the result depends on several factors like the difficulty of examination, level of grading, disturbances in that state, etc. When the numbers for 2010 are out, I guess the variable trend in tables will stay but perhaps the exact Boards in which there is +/- variation compared to 2009 will change. In any case, one set of students will arbitrarily benefit (not because they are more meritorious) whereas another will lose out (for no fault of theirs).

The argument of JAC that it is not possible to get the top 1% cut-off marks for XII Board exam conducted in 2010 is untenable. With the computerization of marks lists in every education board, it is only a matter of a few commands in MS Excel (or any equivalent database-handling software) to know the answer. Moreover, IISERs still have a few weeks to go before they open admissions for the direct channel and it certainly looks do-

able to have all the numbers in hand by that time. JAC argument sounds like a lame excuse for not wanting to do quick follow up with the boards. 'The cut-off lists given for 2007 (X) and 2009 (XII) are the ones to be followed for 2008 (X) and 2010 (XII) as agreed to by our Joint Admissions Committee for IISER. It normally takes several months for DST to prepare the cut-off tables (which includes the top 1% student) after Class XII results are out. Thus this was the only practical solution.'

A basic tenet in science is to take good quality data and follow logical reasoning to make meaningful conclusions. The large number of magenta and red boxes in Table 1 questions the quality of input data. Even the most thorough analysis will lead only to erroneous projections in such a scenario. The country has high expectations from IISERs. Admission to premier institutes is a matter of touch and go, usually at a decimal point difference for the student. In such a scenario, IISERs using ranking criteria that are off by 5% in many cases seems unfair to the hard working and dedicated student community. Luck rather than merit will decide the outcome of IISER direct admissions. JAC of IISERs is urged to obtain the current data and publish cut-offs of 2008 (X class) and 2010 (XII class) for this year's admissions.

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