JOINT ADMISSION TEST FOR M.Sc. 2014

JAM 2014

To be held on Sunday, 9th February, 2014

Admission to Integrated Ph.D. Programs
at
INDIAN INSTITUTE OF SCIENCE BANGALORE

and

Admission to M. Sc. (Two-Year), Joint M.Sc.-Ph.D., M.Sc.-Ph.D. Dual Degree, M.Sc.-M.Tech. and other Post-Bachelor Degree Programs
at
INDIAN INSTITUTES OF TECHNOLOGY

● BHUBANESWAR ● BOMBAY ● DELHI ● GANDHINAGAR ●GUWAHATI ● HYDERABAD ● INDORE ● KANPUR ● KHARAGPUR ● MADRAS ● ROORKEE

INFORMATION BROCHURE

Organizing Institute

INDIAN INSTITUTE OF TECHNOLOGY KANPUR
KANPUR-208 016

CONTENTS

JAM 2014: What's new?

- Application Forms will NOT be sold through Banks.
- Applications will be accepted only through an Online process.
- CA and GP Test Papers have been discontinued.
- Entry to the Programs which required a candidate to qualify in GP-Test Paper will be through PH.
- MCA, M.Tech in Geological Technology and M.Tech in Geophysical Technology will not be offered from 2014-15 session.
- The Test Papers CY, GG, MA, MS and PH will consist of two parts, namely, Part-I and Part-II. Part-I will be Objective and Part-II will be Subjective. In each of the above Test Papers, a certain number of candidates will be short-listed based on the performance in Part-I. The Subjective part (Part-II) will be evaluated only for those short-listed candidates. The final merit list will be prepared on the basis of performance in both Part-I and Part-II.
- Application Fee has been changed. Please see the details in Table 2.

1. INTRODUCTION

The Indian Institutes of Technology (IITs) are institutions of national importance established through an Act of Parliament. The Indian Institute of Science (IISc) is a premier research and teaching institute established in 1909. The IISc Bangalore & IITs are well known, the world over, for quality education in engineering, science, management and research in frontier areas. The aim of these institutes is to build a sound foundation of knowledge, pursue excellence and enhance creativity in an intellectually stimulating environment. The current pace of advancement of technology needs a coherent back-up of basic science education and research. The vibrant academic ambience and research infrastructure of IISc Bangalore & IITs motivate the students to pursue Research and Development careers in frontier areas of basic sciences as well as interdisciplinary areas of science and technology. Further, IISc & IITs have well equipped modern laboratories, efficient computer networks and state-of-the-art libraries. The teaching process is structured to promote close and continuous contact between the faculty and the students. A number of financial assistantships are available to SC/ST and other deserving and meritorious students at individual institutes.

From the Academic Session 2004-05, IITs have started conducting a **Joint Admission Test for M.Sc. (JAM**). The objective of JAM is to provide admissions to M.Sc. (Two-Year), Joint M.Sc.-Ph.D., M.Sc.-Ph.D. Dual Degree, M.Sc.-M.Tech., and other Post-Bachelor Degree Programs at the IITs and Integrated Ph.D. Degree Programs at IISc and to consolidate Science as a career option for bright students from across the country. JAM is expected to serve as a benchmark for the undergraduate level science education in the country. The integrated Ph.D. Program at IISc was started in the early 90's to enable students to directly join for a Ph.D. degree after their B.Sc. Degree.

The M.Sc. (Two-Year), Joint M.Sc.-Ph.D, M.Sc.-Ph.D., M.Sc.-M.Tech. Dual Degree, and other Post-Bachelor Degree Programs at the IITs and the integrated Ph.D. Program at IISc offer high quality education in their respective disciplines, comparable to the best in the world. The curricula for these Programs are designed to provide the students with opportunities to develop academic talent leading to challenging and rewarding professional life. The curricula are regularly updated at IISc & IITs. The interdisciplinary content of the curricula equips the students with the ability to utilize scientific knowledge for practical applications. The medium of instruction in all the Programs is English.

2. GENERAL INFORMATION

(i) JAM 2014 is open to all nationals (Indian/Foreign). Candidates seeking admission to the academic Programs covered under JAM 2014 need to appear in JAM 2014. There is no age restriction.

(ii) **JAM 2014 will be held on 9th February, 2014.**

(iii) For admission, foreign nationals are required to satisfy the rules and regulations of the admitting Institute(s) pertaining to foreign students. For further details, they are advised to contact the concerned Admitting Institute(s).

(iv) To apply for admission to a desired Program, a candidate is required to qualify in the corresponding Test Paper and also satisfy the Minimum Educational Qualifications (MEQs) and Eligibility Requirement (ER) of the respective Academic Program.

(v) The candidates who have either appeared or are due to appear in the final examination of their qualifying degree in 2014 are also eligible to appear in the test. By qualifying in JAM 2014, candidates can apply for provisional admission subject to the condition that: (a) all parts of their final examination shall be completed by the date of registration of the Admitting Institute, and (b) proof of having passed the qualifying degree with required eligibility, as specified by the Admitting Institute will be submitted by **30th September, 2014**.

(vi) Admission to most of the Academic Programs at different institutes will be made on the basis of merit in JAM 2014.

(vii) **For a few Programs at IISc, IITB, and IITK, the admission will also depend on additional interviews that will be held during the time window given in this brochure (see Important Dates on the inside Back Cover).**

(viii) **The candidates who have obtained B.Sc. degree through Distance Education/Correspondence Mode and are desirous of admission to M.Sc. Mathematics or M.Sc. Physics Programs of IIT Madras will have to appear for an additional test/interview.**

(ix) On the basis of performance in JAM 2014, for each test paper, separate merit lists will be prepared for Un-Reserved (UR), OBC Non-Creamy Layer (OBC-NCL), SC, ST, and Persons with Disability (PD) category candidates.

(x) Requests for the change of category, if any, with proper documentation, should reach the Organizing Institute latest by **6th December, 2013.** Requests received after this date will not be accepted under any circumstances.

(xi) **Candidates should note that mere appearance in JAM 2014 or being in the merit list of any test paper neither guarantees nor provides any automatic entitlement to admission.** Qualified candidates will have to apply for admission as per the prescribed procedure. Admissions shall be made in order of merit in each category and depending on the number of seats available at the Admitting Institute(s).

(xii) With regard to the interpretation of the provisions on any matter not covered in this Information Brochure, the decision of the Organizing Institute shall be final and binding on all the parties concerned.

3. ACADEMIC PROGRAMS

The following are the full-time M.Sc. (Two-Year), Joint M.Sc.-Ph.D., M.Sc.-Ph.D. Dual Degree, M.Sc.-M.Tech., and other Post-Bachelor Degree Programs at different IITs and Integrated Ph.D. Programs at IISc to which admissions shall be made on the basis of JAM 2014.

Indian Institute of Science Bangalore (IISc): Integrated Ph.D. Programs in (i) Biological Sciences, (ii) Chemical Sciences, (iii) Mathematical Sciences, and (iv) Physical Sciences.

IIT Bhubaneswar (IITBBS): Joint M.Sc.-Ph.D. Programs in (i) Chemistry, (ii) Earth Science, (iii) Mathematics, and (iv) Physics.

IIT Bombay (IITB): Two-year Master of Science (M.Sc.) Programs in (i) Applied Geology, (ii) Applied Geophysics, (iii) Applied Statistics and Informatics, (iv) BioTechnology, (v) Chemistry, (vi) Mathematics, and (vii) Physics.
Four-year Dual Degree Program in M.Sc. (Physics)-M.Tech. (Materials Science) with specialization in Nano-Science and Technology.
M.Sc.-Ph.D. Dual Degree Programs in (i) Applied Geology, (ii) Applied Geophysics, (iii) BioTechnology, (iv) Chemistry, (v) Energy, (vi) Environmental Science and Engineering, (vii) Operations Research, and (viii) Physics. Both the degrees will be awarded together after the successful completion of the Programs.

IIT Delhi (IITD): Two-year Master of Science (M.Sc.) Programs in (i) Chemistry, (ii) Mathematics, and (iii) Physics.

IIT Gandhinagar (IITGN): Two-year Master of Science (M.Sc.) Programs in (i) Chemistry, (ii) Mathematics, and (iii) Physics.

IIT Guwahati (IITG): Two-year Master of Science (M.Sc.) Programs in (i) Chemistry, (ii) Mathematics and Computing, and (iii) Physics.

IIT Hyderabad (IITH): Two-year M.Sc. Programs in (i) Chemistry, (ii) Mathematics, and (iii) Physics.

IIT Indore (IITI): Two-year Master of Science (M.Sc.) Programs in (i) Chemistry, and (ii) Physics.

IIT Kanpur (IITK): Two-year Master of Science (M.Sc.) Programs in (i) Chemistry, (ii) Mathematics, (iii) Physics, and (iv) Statistics.
M.Sc.-Ph.D. Dual Degree Program in Physics (Transfer from M.Sc.-Ph.D. Dual Degree Program to M.Sc. Physics Program is not permitted. However, for the students admitted to the M.Sc.-Ph.D. Dual Degree Program, the M.Sc. degree will be given after successful completion of all academic requirements of the first six semesters while working towards Ph.D. degree).

IIT Kharagpur (IITKgp): Joint M.Sc.-Ph.D. Programs in (i) Chemistry, (ii) Geology, (iii) Mathematics, and (iv) Physics.

IIT Madras (IITM): Two-year Master of Science (M.Sc.) Programs in (i) Chemistry, (ii) Mathematics, and (iii) Physics.

IIT Roorkee (IITR): Two-year Master of Science (M.Sc.) Programs in (i) Applied Geology, (ii) Applied Mathematics, (iii) BioTechnology, (iv) Chemistry, (v) Industrial Mathematics and Informatics, and (vi) Physics.

The academic Programs, their durations and number of seats available in different institutes with Program codes are listed in Appendix-I.

4. TEST PAPERS AND MINIMUM EDUCATIONAL QUALIFICATIONS (MEQ)

Minimum Educational Qualifications (MEQ) for Admissions, the names of the Test Papers with their Codes and the corresponding Academic Programs for Admission are given in Appendix-II. Admission to each Academic Program shall be offered on the basis of merit in the corresponding Test Paper(s) of JAM 2014.

5. ELIGIBILITY REQUIREMENTS (ERs) FOR ADMISSION

The candidates who qualify in JAM 2014 shall have to fulfill the following Eligibility Requirement (ER) for admissions in IISc & IITs.

(i) **For IISc Bangalore: First class** marks (as declared by the University) for Un-Reserved/OBC Category Candidates and **Second class** (as declared by the University) or **50%** aggregate marks, **without rounding off**, for SC/ST and PD Category Candidates in the qualifying degree.

(ii) **For IIT Guwahati**: At least (a) 55% marks in Major/Honors and Pass in all other subjects, including Languages and Subsidiaries or (b) 55% aggregate marks (taking into account all subjects, including Languages and Subsidiaries, all years combined) for Un-Reserved/OBC Category Candidates; and at least (a) 50% marks in Major/Honors and pass in all other subjects, including Languages and Subsidiaries, or (b) 50% aggregate marks (taking into account all subjects, including Languages and Subsidiaries, all years combined) for SC/ST and PD Category Candidates in the qualifying degree.

(iii) **For all other IITs:** At least **55%** aggregate marks, **without rounding off**, (taking into account all subjects, including Languages and Subsidiaries, all years combined) for Un-Reserved/OBC Category Candidates and at least **50%** aggregate marks, **without rounding off**, (taking into account all subjects, including Languages and Subsidiaries, all years combined) for SC/ST and PD Category Candidates in the qualifying degree.

For Candidates with letter grades/CGPA (instead of percentage of marks), the equivalence in percentage of marks will be decided by the Admitting Institute(s).

Proof of having passed the Qualifying Degree with the Minimum Educational Qualifications (MEQ) as specified by the admitting institute should be submitted by **30th September, 2014**.

At the time of admission, all admitted candidates will have to submit a physical fitness certificate from a registered medical practitioner in the prescribed form. At the time of registration, the admitted candidates may also have to undergo a physical fitness test by a medical board constituted by the Admitting Institute. In case a candidate is not found physically fit to pursue his/her chosen course of study, his/her admission is liable to be cancelled.

Note:

(a) It will entirely be the responsibility of the Candidate to prove that he/she satisfies the Minimum Educational Qualifications (MEQs) and Eligibility Requirements (ERs) for Admissions.

(b) The Admitting Institute has the right to cancel, at any stage, the admission of a candidate who is found to have been admitted to a course to which he/she is not entitled, being unqualified or ineligible in accordance with the rules and regulations in force.

6. PATTERN OF TEST PAPERS

The questions for Biological Sciences (BL) and BioTechnology (BT) Test Papers will have 100 Objective type questions, each having 1 mark. Each question will have four choices as possible answers, of which, only **one** will be correct. Candidates will get **negative** 1/3 for each wrong answer. These Test Papers have to be answered in an Objective Response Sheet (ORS) by darkening the appropriate bubble using a black ink ball point pen. Since the ORS will be evaluated by electronic means, it is imperative that the instructions given on the ORS are carefully read and followed by the candidates.

The Question-cum-Answer Booklets for the Test Papers CY, GG, MA, MS and PH will consist of two parts (Part-I and Part-II). The weightage of Part-I is 60% and that of Part-II is 40%. Part-I will consist of multiple choice questions (MCQ). Some of the questions are of 1 mark each and others are of 2 marks each. Answers to this part have to be filled in the ORS by darkening the appropriate bubble as explained in the previous paragraph. There will be **negative** marking for wrong answers. The negative marking scheme will be **negative** 1/3 for 1 mark question and **negative** 2/3 for 2 marks questions. Part-II will consist of Subjective type questions. The answers to Part-II have to be given at appropriate places in the "Question-cum-Answer Booklet" itself. No supplementary sheet will be provided.

Note:

(a) **Use of Cellular Phone and/or Electronic Gadgets of any kind other than a Non-Programmable Calculator is NOT permitted in the Examination Hall.**

(b) All answers to the Subjective type questions must be written in blue/black/ blue-black ink only. Sketch pen, pencil or ink of any other color is not permitted.

(c) The medium for all the Test Papers will be English only.

(d) Use of unfair means by a candidate in JAM 2014, whether detected at the time of Test, Evaluation or at any other stage, will lead to cancellation of his/her candidature as well as disqualification of the candidate from appearing in JAM in future.

(e) Disclosure of identity in any form, such as writing registration number or name inside the Question-cum-Answer booklet, or making any kind of distinguishing marks, may lead to disqualification

of the candidate from JAM 2014.

7. TEST SCHEDULE

The JAM 2014 exam will be held on 9th February, 2014 (Sunday) in two sessions. The schedule for different Test Papers of JAM 2014 is given in Table 1.

Table 1: Test schedule for JAM 2014

Date	Session	Time	Test Paper Codes
9th February 2014 (Sunday)	I	9:00 a.m.-12:00 noon	BT/CY/GG/MS
	II	2:00 p.m.-5:00 p.m.	BL/MA/PH

The Test Schedule will not be changed under any circumstances.

7.1. Number of Test Papers allowed: A candidate can appear in either one or two Test Paper(s), subject to the restrictions imposed by the Test Schedule (Table 1) and on payment of the requisite additional fee for the second Test Paper, as applicable. Candidates desirous of appearing in two Test Papers must ensure, from the Test Schedule (Table 1), that these Test Papers are not scheduled in the same session.

8. CHOICE OF EXAMINATION CENTRES

The locations of Examination Cities/Towns for JAM 2014 are listed in Appendix-III. Candidates must specify their first and second choice cities by choosing the appropriate codes. If enough candidates are not available at a listed City/Town, then the City/Town may be dropped from the final list, and those candidates will either be allotted a center in the city of their second choice or in a city near the city of the first choice.

A center once allotted will not normally be changed. A request for change of a center within the same City/Town will **NOT** be permitted. In exceptional circumstances, a change of center to another City/Town may be permitted if a request with a valid reason for the same is received in the office of the Organizing Chairman, JAM 2014, IIT Kanpur, Kanpur-208016, on or before **30th November, 2013,** along with a Demand Draft of Rs. 300/- (Rs. 150/- for SC/ST and PD Candidates) drawn in favor of **"Chairman, JAM, IIT Kanpur",** on any Nationalized Bank, payable at Kanpur. The decision of the Organizing Chairman, JAM 2014, in this regard will be final.

9. RESERVED SEATS

In every Program, a certain number of seats are reserved for candidates belonging to various categories. The number of seats reserved under various categories is given in Appendix-I. The category rank in a JAM paper will be prepared based on the category declaration by the candidate in the application form. The final seat allotment will be done based on a valid Category Certificate (in the prescribed format) submitted along with the Application Form for admission.

A candidate who seeks admission under SC/ST/OBC category must submit, along with the application form for admission, the requisite certificate issued by a competent authority as specified in Appendix-IV, failing which his/her candidature for admission will not be considered under the reserved category.

A candidate who seeks admission under the OBC-NCL Category must submit an OBC-NCL Certificate in the format shown in Appendix-V along with the Application Form for admission. **The candidate will be considered in the Un-Reserved Category in case the OBC-NCL Certificate is not in the prescribed format and no opportunity will be given to the candidate for late submission of the said certificate under any circumstances.**

For PD candidates with any category of disability (viz., blindness or low vision, hearing impairment, loco-motor disability, and/or cerebral palsy), benefit will be given to only those who have at least **40%** permanent physical impairment with respect to a body part/system /extremity/whole body, etc.. Such candidates must submit, along with the Application Form, the Certificate of Disability from a Government Medical Board and should be fit to pursue the Program. The disability percentage of candidates selected for admission under PD category will also be required to be certified by a Medical Board, duly constituted by the Admitting Institute.

Note:

(a) The provisions for the reserved seats given above are subject to modification in accordance with any Government Order, if issued subsequently by the Government of India.

(b) The candidate is entirely responsible for proving the satisfiability of Eligibility Requirement (ER) for admission in terms of Minimum Educational Qualifications (MEQ), etc., and for claiming reservation under a specific category.

10. APPLICATION PROCEDURE FOR JAM 2014

Candidates can apply for JAM 2014 only through online process. The details of the Application Fee specific to Genders/Category are given in Table 2.

The facility for Online Registration will be available through the website http://gate.iitk.ac.in/jam from **16th September, 2013**. The last date for filling in and submission of Online Application Forms on the website is **16th October, 2013 at 23:59 hrs**. A student has to first register on the JAM-2014 website. The candidate then needs to fill-in all the personal data. The personal data can be modified until the candidate has paid the fee. Once the personal data is submitted, the candidate can make a payment either through net-banking or through

challan. In case of payment through net-banking, the site will redirect the candidate to a secure payment gateway through which the payment can be made. After the successful payment, the payment gateway will redirect the candidate back to the JAM-2014 website for taking the printout of the Online Registration Form.

In case of payment through challan, the candidate should generate and print a PDF -file of the challan, which needs to be presented to any Core Banking Branch of State Bank of India on the next day for payment. The payment data of the candidate will get automatically updated in the portal. After two days of making the payment, the candidate can login into the JAM-2014 Online Application Portal for taking a printout of the Online Registration Form. Note that due to the above process, **the last date for payment of Application Fee through challan is 12th October, 2013**.

Table 2: Application Fee for JAM-2014

Gender	Category	Fee for	
		One Test Paper	Two Test Papers
Female	All	750/-	1050/-
Male &	UR*/OBC	1500/-	2100/-
Others	SC/ST/PD*	750/-	1050/-

**Person with Disability, UR-Unreserved Category*

Note:

If the fee paid is NOT as per the Gender and Category, and the number of Test Paper(s), entered in the Application Form, then the filled in form will be rejected without any intimation to the candidate.

Once the data is entered correctly, the candidate should download the form and take a print out of the same. The photograph, declaration and signature will have to be provided by the candidate on the printed Online Registration Form. The photograph should be glued at the appropriate place provided in the form and must not be stapled and not be signed/attested. The candidate must generate and print the address label with barcode which should be pasted on the top of the envelope.

The envelope containing the signed Application Form along with the following:

a) **JAM Office copy of the stamped challan (of the SBI Core Banking Branch where the challan amount was paid) or the proof of Debit Card/Net Banking Transaction for the JAM 2014 Application Form,**

b) **Filled in OBC-NCL Certificate (see Appendix-V), if applicable,**

c) **Filled in SC/ST Certificate, if applicable, and**

d) **Physical Disability Certificate, if applicable;**

must be sent by Speed/Registered Post (mails through Courier will NOT be accepted) so as to reach "The Organizing Chairman, JAM 2014, GATE/JAM Office, Indian Institute of Technology Kanpur, UP 208016", latest by 23rd October, 2013.

Candidates are advised to retain a photocopy of the completed Online Registration Form along with the receipt of Speed/Registered Post for future use.

Any Online Registration Form received after **23rd October, 2013** will not be accepted. The late arrival of the envelope containing the Application Form at the Organizing Institute, due to any reason whatsoever will not be considered as a valid reason for the late submission of the Online Registration Form after the deadline. The Organizing Institute is not responsible for any Postal delay or irregularity or loss in postal transit.

11. ADMIT CARD

An Admit Card, bearing the Candidate's Name, Registration Number, Photograph, Signature, Category as declared by the Candidate, Disability Status and Name(s) and Code(s) of the Test Paper(s) applied along with the Name and Address of the Test Center allotted, will be available for download from JAM 2014 website during 13th December to 20th December, 2013. The Candidate should carefully examine the Admit Card for all the entries made therein. In case of any discrepancy, the Candidate should inform the Organizing Chairman, JAM 2014, IIT Kanpur immediately. If a candidate is not able to download the Admit Card, then the Chairperson JAM of the respective IISc/IITs (see Appendix-III), under which the first choice Test City/Town of the candidate falls, may be contacted through Phone/Fax/E-mail, giving the Online Registration Number, Name, Mailing Address and City Code of the desired Test Center (first choice) to get information about the Registration Number and the Name of the Test Center allotted. Those candidates who may have misplaced, lost or are unable to download their Admit Card will be issued a Duplicate Admit Card by the Presiding Officer of their respective Test Center, on the Date of Examination, *i.e.*, **9th February, 2014** (one hour before the examination), on production of a photograph identical to that pasted on the Application/ Online Registration Form and the Identity Card from the Institution last attended (bring the Original Identity Card along with its Photocopy). No candidate will be permitted to appear in JAM 2014 Test without a valid Admit Card. The Admit Card should be presented to the invigilators/JAM officials for verification.

The Admit Card of JAM 2014 must be carefully preserved by the Candidate and produced at the time of admission, if required by the Admitting Institute.

The Organizing Institute may withdraw the permission granted to a candidate to appear in JAM 2014, if it is found that the candidate is not eligible to appear in the Test even though an Admit Card has been issued and is produced by the candidate before the Presiding Officer of the Test Center.

12. RANK AND MERIT LIST

12.1 Rank List

For each test paper in JAM 2014, separate rank lists, on the basis of written test will be prepared for candidates in Un-Reserved, OBC-NCL, SC, ST, and PD categories.

NOTE: To OBC-NCL Candidates

(i) OBC-NCL Candidates must submit their Category Certificate along with the Online Application Form in the prescribed format (see Appendix V).

(ii) The Category Rank in a JAM Test Paper will be prepared based on the Category declared by the Candidate in the Application Form. **The relevant certificate will NOT be accepted after 13th April, 2014, under any circumstances.** The final seat allotment will be done based on the OBC-NCL Certificate submitted along with the Application Form for admission. **The candidate will be considered in the Un-Reserved Category in case the OBC-NCL Certificate is not in the prescribed format.**

Tie-Breaking: The tie-breaking criterion for awarding the ranks to candidates scoring the same aggregate marks in a Test Paper will be as follows:

(a) For BL and BT Test Papers:
The candidate with a higher ratio of positive marks to negative marks will be given a higher rank. If this criterion fails to break ties, the candidates concerned will be awarded the same rank.

(c) For CY, GG, MA, MS, and PH Test Papers:
The candidate having higher score in Part-II shall be given a higher rank. If this criterion fails to break ties, the candidates concerned will be awarded the same rank.

12.2 Merit List

The results (merit lists) will be declared at 17:00 hrs on **16th April 2014**. The results will be available on the website: **http://gate.iitk.ac.in/jam.**

For each Test Paper, an All India Merit List will be prepared. Separate Merit Lists will be prepared for OBC-NCL, SC, ST, and PD Category Candidates. The number of candidates included in the All India Merit List will depend on the total number of seats available in a given subject. These candidates (henceforth called Qualified Candidates) are eligible to apply for admission to any of the corresponding Academic Programs available (see Appendix-I) at IISc & IITs.

The **Score Card (indicating the All India Rank(s) and the mark(s) obtained by the Candidate)** will be sent by Speed Post to the Qualified Candidates.

13. ADMISSION PROCEDURE

Only the candidates who **qualify** in JAM 2014 (whose names appear in the Merit List) will be eligible to apply for admission to any of the corresponding Academic Programs available at IISc & IITs (refer to Appendices-I and II of this Information Brochure).

For admission to Integrated Ph.D. Programs at IISc & M.Sc.-Ph.D. Dual Degree Programs at IIT Bombay & M.Sc.-Ph.D. Dual Degree Program in Physics at IIT Kanpur, the JAM-2014 Qualified Candidates are required to refer to the websites of IISc Bangalore, IITB, and IITK for details including the dates for the interview.

Candidates are advised, in their own interest, to refer to the brief profiles of the Admitting Institutes and Departments at their respective websites (Table 3).

Based on the Test Paper(s) qualified, an Applicant can apply to one or more Academic Programs covered under that Test Paper(s), subject to fulfillment of the Minimum Educational Qualifications (MEQs) and the Eligibility Requirements (ERs) of the Admitting Institute(s). For the academic session 2014-15, the following admission procedure shall be followed for all the Programs at IISc & IITs covered under JAM 2014.

(i) After JAM 2014 results are announced, **a Qualified Candidate will have to apply Online using the prescribed Admission Form to the Organizing Institute (IIT Kanpur) only, irrespective of IISc & IITs where the admission is sought.** The Application Form will be available on the website of the Organizing Institute (IIT Kanpur).

(ii) Irrespective of whether a candidate has qualified in one or two Test Papers, **only one** duly completed Admission Form should be submitted listing all the Programs at IISc & IITs (along with the order of preferences) where the candidate is seeking admission.

(iii) The printout of the duly completed Admission Form along with the required enclosures must be sent by the applicant to the **Organizing Chairman, JAM 2014, IIT Kanpur, Kanpur, UP 208016,** along with a Demand Draft of Rs.600/- (Rupees Six Hundred only), drawn in favor of "Chairman JAM, IIT Kanpur", payable at Kanpur, as a non-refundable processing fee. The Admission Form will not be considered if it is found incomplete in any respect or if it is not accompanied by a Demand Draft of Rs.600/- and the candidate will not be considered for admission irrespective of satisfying the Eligibility Requirement (ER) for any Program(s) for which the Admission Form has been submitted. Also, a candidate will be considered for admission only to the Program(s), given in his/her Admission Form. **The last date for receiving the**

completed Admission Form along with Demand Draft of Rs.600/- at the Organizing Institute (IIT Kanpur) is 30th April, 2014.

(iv) Qualified Candidates who have chosen to apply for Integrated Ph.D. Programs at IISc & selected M.Sc.-Ph.D. Dual Degree Programs at IIT Bombay, M.Sc.- and Ph.D. Dual Degree Program in Physics at IIT Kanpur will additionally follow procedure given on the Admission website of these institutes and complete the required procedure.

(v) Taking into consideration the order of preference as given in the Admission Form and corresponding rank(s) in the Merit List, the first Admission List for each Program under JAM 2014 will be prepared by the Organizing Institute.

(vi) After the declaration of the First Admission List, admission offers will be sent by the respective Admitting Institute(s) to the concerned candidates on the next day. Along with the acceptance offer, these candidates will also have to send an advance fee of Rs. 10000/- to the Organizing Chairman through a demand draft in favor of the "**Chairman**, **JAM, IIT Kanpur**", payable at **Kanpur.** This amount will be transferred to the Admitting Institute and it will be adjusted against the Institute Fee at the time of Registration.

(vii) If seats remain vacant after the first admission process is over, the Organizing Institute will prepare a Second Admission List. The admission offers based on the Second List, if any, will be sent by the Admitting Institute(s) to the candidates concerned.

(viii) Candidates who have been offered admission through the Second List but not through the First List, must send their acceptance offer, along with an advance fee of Rs. 10000/- to the Organizing Chairman through a demand draft in favor of the "**Chairman**, **JAM, IIT Kanpur**", payable at **Kanpur.** This amount will be transferred to the Admitting Institute and this will be adjusted against the Institute Fee at the time of Registration.

(ix) If seats remain vacant even after the Second Admission Process is over, the Organizing Institute will prepare a Third Admission List. The admission offers based on the Third List, if any, will be sent by the Admitting Institute(s) to the candidates concerned.

(x) The candidates offered admission through the Third List must report directly to the **Admitting Institute** on the date of the Registration. **With that, the Admission Process based on JAM 2014 will come to a close.**

(xi) If a candidate is allotted a seat through the First Admission List and if the offer of admission is accepted, the lower preferences of the candidate, if any, will be automatically cancelled. However, the candidate will remain on the waiting list for all the higher preferences (if any). Qualified Candidates, who are not allotted any seat in the First/Second Admission List, will remain on the waiting list in the next round of admission(s). If a Qualified Candidate fails to accept an admission offer, he/she will not be considered further in the admission process.

Note:

(a) Verification of Minimum Educational Qualifications (MEQs) and the Eligibility Requirement (ER) for admission is the prerogative of the Admitting Institute(s) only and the Organizing Institute will not respond to any queries in this regard.

(b) The offer of admission to a candidate will be provisional, subject to the fulfillment of all the requirements by the dates specified.

Candidates should note that being in the Merit List of any Test Paper neither guarantees nor provides any automatic entitlement for admission. Admissions shall be made in order of merit and depending on the number of seats available at the Admitting Institute(s).

14. PROFILE OF IISc BANGALORE & IITs

These can be seen at the websites of the respective Institutions (see Table-3).

Table 3: Website Addresses of IISc Bangalore & IITs

S.No.	Name of Institute	Website
1	IISc Bangalore	www.iisc.ernet.in/
2	IIT Bhubaneswar	www.iitbbs.ac.in/
3	IIT Bombay	www.iitb.ac.in/
4	IIT Delhi	www.iitd.ac.in/
5	IIT Gandhinagar	www.iitgn.ac.in/
6	IIT Guwahati	www.iitg.ac.in/
7	IIT Hyderabad	www.iith.ac.in/
8	IIT Indore	www.iiti.ac.in/
9	IIT Kanpur	www.iitk.ac.in/
10	IIT Kharagpur	www.iitkgp.ac.in/
11	IIT Madras	www.iitm.ac.in/
12	IIT Roorkee	www.iitr.ac.in/

15. SYLLABI FOR TEST PAPERS

15.1 BIOLOGICAL SCIENCES (BL)

General Biology: Taxonomy and physiology, Pro-and eukaryotic Organizms; cell organelles and their function; multicellular Organization; energy transformations; internal transport systems of plants; respiration; regulation of body fluids and excretory mechanisms;

cellular reproduction; Mendelian genetics and heredity; biology and populations and communities; evolution; genesis and diversity of Organizms; animal behaviour, plant and animal diseases.

Basics of Biochemistry, Biophysics, Molecular Biology: Buffers; trace elements in biological systems; enzymes and proteins; vitamins; biological oxidations, carbohydrates and lipids and their metabolisms; digestion and absorption; detoxifying mechanisms; plant and animal hormones and their action, nervous system, nucleic acids, nature of gene and its function, Genetic code, synthesis of nucleic acids and proteins. Enzyme mechanisms and kinetics, nucleic acid metabolism, photo synthesis.

Structure of Biomolecules*:* intra and intermolecular forces; thermodynamics and kinetics of biological systems, principles of x-ray diffraction, IR and UV spectroscopy and hydrodynamic techniques.

Microbiology, Cell Biology and Immunology*:* Classes of microOrganizms and their characterization, nutrient requirement for growth; laboratory techniques in microbiology, pathogenic microOrganizms and disease; applied microbiology; viruses, Microbial genetics. Innate and adaptive immunity, antigen antibodies.Cell theory; Cell architecture; methods of cell fractionation; cell division; types of chromosome structure; biochemical genetics- inborn errors of metabolisms; viruses and fungi; principles of processes of development.

Mathematical Sciences*:* Mathematical functions (algebraic, exponential, trigonometric), their derivatives (derivatives and integrals of simple functions), permutations and combinations.

15.2 BIOTECHNOLOGY (BT)

The BioTechnology (BT) test paper comprises of Biology (44% weightage), Chemistry (20% weightage), Mathematics (18% weightage) and Physics (18% weightage).

BIOLOGY (10+2+3 level)

General Biology: Taxonomy; Heredity; Genetic variation; Conservation; Principles of ecology; Evolution; Techniques in modern biology.

Biochemistry and Physiology: Carbohydrates; Proteins; Lipids; Nucleic acids; Enzymes; Vitamins; Hormones; Metabolism – Glycolysis, TCA cycle, Oxidative Phosphoryation; Photosynthesis. Nitrogen Fixation, Fertilization and Osmoregulation; Vertebrates-Nervous system; Endocrine system; Vascular system; Immune system; Digestive system and Reproductive System. *Basic BioTechnology*: Tissue culture; Application of enzymes; Antigen-antibody interaction; Antibody production; Diagnostic aids.

Molecular Biology: DNA; RNA; Replication; Transcription; Translation; Proteins; Lipids and Membranes; Operon model; Gene transfer.

Cell Biology: Cell cycle; Cytoskeletal elements; Mitochondria; Endoplasmic reticulum; Chloroplast; Golgi apparatus; Signaling.

Microbiology: Isolation; Cultivation; Structural features of virus; Bacteria; Fungi; Protozoa; Pathogenic micro-Organizms.

CHEMISTRY (10+2+3 level)

Atomic Structure: Bohr's theory and Schrodinger wave equation; Periodicity in properties; Chemical bonding; Properties of s, p, d and f block elements; Complex formation; Coordination compounds; Chemical equilibria; Chemical thermodynamics (first and second law); Chemical kinetics (zero, first, second and third order reactions); Photochemistry; Electrochemistry; Acid-base concepts; Stereochemistry of carbon compounds; Inductive, electromeric, conjugative effects and resonance; Chemistry of Functional Groups: Hydrocarbons, alkyl halides, alcohols, aldehydes, ketones, carboxylic acids, amines and their derivatives; Aromatic hydrocarbons, halides, nitro and amino compounds, phenols, diazonium salts, carboxylic and sulphonic acids; Mechanism of organic reactions; Soaps and detergents; Synthetic polymers; Biomolecules– amino acids, proteins, nucleic acids, lipids and carbohydrates (polysaccharides); Instrumental techniques-chromatography (TLC, HPLC), electrophoresis, UV-Vis, IR and NMR spectroscopy, mass spectrometry.

MATHEMATICS (10+2 level)

Sets, Relations and Functions, Mathematical Induction, Logarithms, Complex numbers, Linear and Quadratic equations, Sequences and Series, Trigonometry, Cartesian System of Rectangular Coordinates, Straight lines and Family, Circles, Conic Sections, Permutations and Combinations, Binomial Theorem, Exponential and Logarithmic Series, Mathematical Logic, Statistics, Three Dimensional Geometry, Vectors, Matrices and Determinants, Boolean Algebra, Probability, Functions, limits and Continuity, Differentiation, Application of Derivatives, Definite and Indefinite Integrals, Differential Equations.

PHYSICS (10+2 level)

Physical World and Measurement, Elementary Statics and Dynamics, Kinematics, Laws of Motion, Work, Energy and Power, Electrostatics, Current electricity, Magnetic Effects of Current and Magnetism, Electromagnetic Induction and Alternating Current, Electromagnetic waves, Optics, Dual Nature of Matter and Radiations, Atomic Nucleus, Solids and Semiconductor Devices, Principles of Communication, Motion of System of Particles and Rigid Body, Gravitation, Mechanics of Solids and Fluids, Heat and Thermodynamics, Oscillations, Waves.

15.3 CHEMISTRY (CY)

PHYSICAL CHEMISTRY

Basic Mathematical Concepts: Functions, maxima and minima, integrals, ordinary differential equations, vectors and matrices, determinants, elementary statistics and probability theory.

Atomic and Molecular Structure: Fundamental particles, Bohr's theory of hydrogen-like atom; wave-particle duality; Uncertainty principle; Schrödinger's wave equation; Quantum numbers, shapes of orbitals; Hund's rule and Pauli's exclusion principle, electronic configuration of simple homonuclear diatomic molecules.

Theory of Gases: Equation of state of ideal and non-ideal (van der Waals) gases, Kinetic theory of gases.

Maxwell-Boltzmann distribution law; equipartition of energy.

Solid state*:* Crystals, crystal systems, X-rays, NaCl and KCl structures, close packing, atomic and ionic radii, radius ratio rules, lattice energy, Born-Haber cycle, isomorphism, heat capacity of solids.

Chemical Thermodynamics: Reversible and irreversible processes; First law and its application to ideal and non-ideal gases; Thermochemistry; Second law; Entropy and free energy, Criteria for spontaneity.

Chemical and Phase Equilibria**:** Law of mass action; K_p, K_c, K_x and K_n; Effect of temperature on K; Ionic equilibria in solutions; pH and buffer solutions; Hydrolysis; Solubility product; Phase equilibria–Phase rule and its application to one-component and two-component systems; Colligative properties.

Electrochemistry: Conductance and its applications; Transport number; Galvanic cells; EMF and Free energy; Concentration cells with and without transport; Polarography; Concentration cells with and without transport; Debey-Huckel-Onsagar theory of strong electrolytes.

Chemical Kinetics: Reactions of various order, Arrhenius equation, Collision theory; Theory of absolute reaction rate; Chain reactions – Normal and branched chain reactions; Enzyme kinetics; photochemical processes; Catalysis.

Adsorption: Gibbs adsorption equation, adsorption isotherm, types of adsorption, surface area of adsorbents, surface films on liquids.

ORGANIC CHEMISTRY

Basic Concepts in Organic Chemistry and Stereochemistry: Electronic effect (resonance, inductive, hyperconjugation) and steric effects and its applications (acid/base property). Optical isomerism in compounds without any stereocenters (allenes, biphenyls), conformation of acyclic systems (substituted ethane/n-propane/n-butane) and cyclic systems (mono and di substituted cyclohexanes).

Organic Reaction Mechanism and Synthetic Applications**:** Chemistry reactive intermediates, carbine, nitrene, benzyne, Hofmann-Curtius-Lossen rearrangement, Wolf rearrangement, Simmons-Smith reaction, Reimer-Tiemann reaction, Michael reaction, Darzens reaction, Witting reaction, McMurry reaction. Pinacol-pinacolone, Favorskii, benzilic acid rearrangement, dienonc-phenol rearrangement, Bayer-Villeger reaction). Oxidation and reduction reactions in organic chemistry. Organometallic reagents in organic synthesis (Grignard and organocopper). Diels-Alder reaction, Sigmatropic reactions.

Qualitative Organic Analysis: Functional group interconversions, structural problems using chemical reactions, identification of functional groups by chemical tests, elementary 1H NMR and IR spectroscopy as a tool for structural elucidation.

Natural Products Chemistry: Introductory chemistry of alkaloids, terpenes, carbohydrates, amino acids, peptides and nucleic acids.

Heterocyclic Chemistry: Monocyclic compounds with one hetero atom.

INORGANIC CHEMISTRY

Periodic Table: Periodic classification of elements and periodicity in properties; general methods of isolation and purification of elements.

Chemical Bonding and Shapes of Compounds: Types of bonding; VSEPR theory and shapes of molecules; hybridization; dipole moment; ionic solids; structure of NaCl, CsCl, diamond and graphite; lattice energy.

Main Group Elements (s and p blocks): Chemistry with emphasis on group relationship and gradation in properties; structure of electron deficient compounds of main group elements and application of main group elements.

Transition Metals (d block): Characteristics of 3d elements; oxide, hydroxide and salts of first row metals; coordination complexes; VB and Crystal Field theoretical approaches for structure, color and magnetic properties of metal complexes. Organometallic compounds, metal carnonyls, nitrosyls and metallocenes, ligands with back bonding capabilities; MO theory approaches to explain bonding in metal-carbonyl, metal-nitrosyl and metal-phosphine complexes.

Bioinorganic Chemistry**:** Essentials and trace elements of life, basic reactions in the biological systems and the role of metal ions especially Fe^2+, Fe^3+, Cu^2+ and Zn^2+, function of hemoglobin and myoglobin.

Instrumental Methods of Analysis: Basic principles, instrumentations and simple applications of conductometry, potentiometry, UV-vis spectro-photometry, analysis of water, air and soil samples.

Analytical Chemistry: Principles of qualitative and quantitative analysis; acid-base, oxidation-reduction and EDTA and precipitation reactions; use of indicators; use of organic reagents in inorganic analysis; radioactivity; nuclear reactions; applications of isotopes.

15.4 GEOLOGY (GG)

The Planet Earth: Origin of the Solar System and the Earth; Geosphere and the composition of the Earth; Shape and size of the earth; Earth-moon system; Formation of continents and oceans; Dating rocks and age of the Earth; Energy in the earth system; Volcanism and volcanic landforms; Interior of earth; Earthquakes; Earth's magnetism and gravity, Isostasy; Elements of Plate tectonics; Orogenic cycles.

Geomorphology: Weathering and erosion; Transportation and deposition due to wind, ice, river, sea, and resulting landforms, Structurally controlled landforms.

Structural Geology: Concept of stratum; Contour; Outcrop patterns; Maps and cross sections; Dip and strike; Classification and origin of folds, faults, joints, foliation and lineation, unconformities; shear zones.

Palaeontology: Major steps in the evolution of life forms; Fossils; their mode of preservation and utility; Morphological characters, major evolutionary trends and ages of important groups of animals-Brachiopoda, Mollusca, Trilobita, Graptolitoidea, Anthozoa, Echinodermata; Gondwana plant fossils; Elementary idea of verterbrate fossils in India.

Stratigraphy: Principles of stratigraphy; Litho-, chrono- and biostratigraphic classification; distribution and classification of the stratigraphic horizons of India from

Archaean to Recent.

Mineralogy: Symmetry and forms in common crystal classes; Physical properties of minerals; Isomorphism and polymorphism, Classification of minerals; Structure of silicates; Mineralogy of common rock-forming minerals; Mode of occurrence of minerals in rocks. Transmitted polarised light microscopy and optical properties of uniaxial and biaxial minerals.

Petrology: Definition and classification of rocks; Igneous rocks-forms of igneous bodies; Crystallization from magma; classification, association and genesis of igneous rocks; Sedimentary rocks-classification, texture and structure; size and shape of sedimentary bodies. Metamorphic rocks-classification, facies, texture and properties.

Economic Geology: Properties of common economic minerals; General processes of formation of mineral deposits; Physical characters; Mode of occurrence and distribution in India both of metallic and non-metallic mineral deposits; Coal and petroleum occurrences in India.

Applied Geology: Ground Water; Mineral exploration, elements of Mining Geology and Environmental Geology; Principles of Engineering Geology.

15.5 MATHEMATICS (MA)

Sequences, Series and Differential Calculus: Sequences and Series of real numbers: Sequences and series of real numbers. Convergent and divergent sequences, bounded and monotone sequences, Convergence criteria for sequences of real numbers, Cauchy sequences, absolute and conditional convergence; Tests of convergence for series of positive terms – comparison test, ratio test, root test, Leibnitz test for convergence of alternating series.

Functions of one variable: limit, continuity, differentiation, Rolle's Theorem, Mean value theorem. Taylor's theorem. Maxima and minima.

Functions of two real variable: limit, continuity, partial derivatives, differentiability, maxima and minima. Method of Lagrange multipliers, Homogeneous functions including Euler's theorem.

Integral Calculus: Integration as the inverse process of differentiation, definite integrals and their properties, Fundamental theorem of integral calculus. Double and triple integrals, change of order of integration. Calculating surface areas and volumes using double integrals and applications. Calculating volumes using triple integrals and applications.

Differential Equations: Ordinary differential equations of the first order of the form y'=f(x,y). Bernoulli's equation, exact differential equations, integrating factor, Orthogonal trajectories, Homogeneous differential equations-separable solutions, Linear differential equations of second and higher order with constant coefficients, method of variation of parameters. Cauchy- Euler equation.

Vector Calculus: Scalar and vector fields, gradient, divergence, curl and Laplacian. Scalar line integrals and vector line integrals, scalar surface integrals and vector surface integrals, Green's, Stokes and Gauss theorems and their applications.

Group Theory: Groups, subgroups, Abelian groups, non-abelian groups, cyclic groups, permutation groups; Normal subgroups, Lagrange's Theorem for finite groups, group homomorphisms and basic concepts of quotient groups (only group theory).

Linear Algebra: Vector spaces, Linear dependence of vectors, basis, dimension, linear transformations, matrix representation with respect to an ordered basis, Range space and null space, rank-nullity theorem; Rank and inverse of a matrix, determinant, solutions of systems of linear equations, consistency conditions. Eigenvalues and eigenvectors. Cayley-Hamilton theorem. Symmetric, skew-symmetric, hermitian, skew-hermitian, orthogonal and unitary matrices.

Real Analysis: Interior points, limit points, open sets, closed sets, bounded sets, connected sets, compact sets; completeness of R, Power series (of real variable) including Taylor's and Maclaurin's, domain of convergence, term-wise differentiation and integration of power series.

15.6 MATHEMATICAL STATISTICS (MS)

The Mathematical Statistics (MS) test paper comprises of Mathematics (40% weightage) and Statistics (60%weightage).

Mathematics:

Sequences and Series: Convergence of sequences of real numbers, Comparison, root and ratio tests for convergence of series of real numbers.

Differential Calculus: Limits, continuity and differentiability of functions of one and two variables. Rolle's theorem, mean value theorems, Taylor's theorem, indeterminate forms, maxima and minima of functions of one and two variables.

Integral Calculus: Fundamental theorems of integral calculus. Double and triple integrals, applications of definite integrals, arc lengths, areas and volumes.

Matrices: Rank, inverse of a matrix. systems of linear equations. Linear transformations, eigenvalues and eigenvectors. Cayley-Hamilton theorem, symmetric, skew-symmetric and orthogonal matrices.

Differential Equations: Ordinary differential equations of the first order of the form y' = f(x,y). Linear differential equations of the second order with constant coefficients.

Statistics Probability: Axiomatic definition of probability and properties, conditional probability, multiplication rule. Theorem of total probability. Bayes' theorem and independence of events.

Random Variables: Probability mass function, probability density function and cumulative distribution functions, distribution of a function of a random variable. Mathematical expectation, moments and moment generating function. Chebyshev's inequality.

Standard Distributions: Binomial, negative binomial, geometric, Poisson, hypergeometric, uniform, exponential, gamma, beta and normal distributions. Poisson and normal approximations of a binomial distribution.

Joint Distributions: Joint, marginal and conditional distributions. Distribution of functions of random variables. Product moments, correlation, simple linear

regression. Independence of random variables.
Sampling distributions: Chi-square, t and F distributions, and their properties.

Limit Theorems: Weak law of large numbers. Central limit theorem (i.i.d.with finite variance case only).

Estimation: Unbiasedness, consistency and efficiency of estimators, method of moments and method of maximum likelihood. Sufficiency, factorization theorem. Completeness, Rao-Blackwell and Lehmann-Scheffe theorems, uniformly minimum variance unbiased estimators. Rao-Cramer inequality. Confidence intervals for the parameters of univariate normal, two independent normal, and one parameter exponential distributions.

Testing of Hypotheses: Basic concepts, applications of Neyman-Pearson Lemma for testing simple and composite hypotheses. Likelihood ratio tests for parameters of univariate normal distribution.

15.7 PHYSICS (PH)

Mathematical Methods: Calculus of single and multiple variables, partial derivatives, Jacobian, imperfect and perfect differentials, Taylor expansion, Fourier series. Vector algebra, Vector Calculus, Multiple integrals, Divergence theorem, Green's theorem, Stokes' theorem. First order equations and linear second order differential equations with constant coefficients. Matrices and determinants, Algebra of complex numbers.

Mechanics and General Properties of Matter: Newton's laws of motion and applications, Velocity and acceleration in Cartesian, polar and cylindrical coordinate systems, uniformly rotating frame, centrifugal and Coriolis forces, Motion under a central force, Kepler's laws, Gravitational Law and field, Conservative and non-conservative forces. System of particles, Center of mass, equation of motion of the CM, conservation of linear and angular momentum, conservation of energy, variable mass systems. Elastic and inelastic collisions. Rigid body motion, fixed axis rotations, rotation and translation, moments of Inertia and products of Inertia, parallel and perpendicular axes theorem. Principal moments and axes. Kinematics of moving fluids, equation of continuity, Euler's equation, Bernoulli's theorem.

Oscillations, Waves and Optics: Differential equation for simple harmonic oscillator and its general solution. Superposition of two or more simple harmonic oscillators. Lissajous figures. Damped and forced oscillators, resonance. Wave equation, traveling and standing waves in one-dimension. Energy density and energy transmission in waves. Group velocity and phase velocity. Sound waves in media. Doppler Effect. Fermat's Principle. General theory of image formation. Thick lens, thin lens and lens combinations. Interference of light, optical path retardation. Fraunhofer diffraction. Rayleigh criterion and resolving power. Diffraction gratings. Polarization: linear, circular and elliptic polarization. Double refraction and optical rotation.

Electricity and Magnetism: Coulomb's law, Gauss's law. Electric field and potential. Electrostatic boundary conditions, Solution of Laplace's equation for simple cases. Conductors, capacitors, dielectrics, dielectric polarization, volume and surface charges, electrostatic energy. Biot-Savart law, Ampere's law, Faraday's law of electromagnetic induction, Self and mutual inductance. Alternating currents. Simple DC and AC circuits with R, L and C components. Displacement current, Maxwell's equations and plane electromagnetic waves, Poynting's theorem, reflection and refraction at a dielectric interface, transmission and reflection coefficients (normal incidence only). Lorentz Force and motion of charged particles in electric and magnetic fields.

Kinetic theory, Thermodynamics: Elements of Kinetic theory of gases. Velocity distribution and Equipartition of energy. Specific heat of Mono-, di- and tri-atomic gases. Ideal gas, van-der-Waals gas and equation of state. Mean free path. Laws of thermodynamics. Zeroth law and concept of thermal equilibrium. First law and its consequences. Isothermal and adiabatic processes. Reversible, irreversible and quasi-static processes. Second law and entropy. Carnot cycle. Maxwell's thermodynamic relations and simple applications. Thermodynamic potentials and their applications. Phase transitions and Clausius-Clapeyron equation. Ideas of ensembles, Maxwell-Boltzmann, Fermi-Dirac and Bose-Einstein distributions.

Modern Physics: Inertial frames and Galilean invariance. Postulates of special relativity. Lorentz transformations. Length contraction, time dilation. Relativistic velocity addition theorem, mass energy equivalence. Blackbody radiation, photoelectric effect, Compton effect, Bohr's atomic model, X-rays. Wave-particle duality, Uncertainty principle, the superposition principle, calculation of expectation values, Schrödinger equation and its solution for one, two and three dimensional boxes. Solution of Schrödinger equation for the one dimensional harmonic oscillator. Reflection and transmission at a step potential, Pauli exclusion principle. Structure of atomic nucleus, mass and binding energy. Radioactivity and its applications. Laws of radioactive decay.

Solid State Physics, Devices and Electronics: Crystal structure, Bravais lattices and basis. Miller indices. X-ray diffraction and Bragg's law Intrinsic and extrinsic semiconductors, variation of resistivity with temperature. Fermi level. p-n junction diode, I-V characteristics, Zener diode and its applications, BJT: characteristics in CB, CE, CC modes. Single stage amplifier, two stage R-C coupled amplifiers. Simple Oscillators: Barkhausen condition, sinusoidal oscillators. OPAMP and applications: Inverting and non-inverting amplifier. *Boolean algebra*: Binary number systems; conversion from one system to another system; binary addition and subtraction. Logic Gates AND, OR, NOT, NAND, NOR exclusive OR; Truth tables; combination of gates; de Morgan's theorem.

Appendix-I: Academic Programs (Codes) Available at Different Institutes for JAM 2014 Qualified Candidates[+]

IISc Bangalore (Zone-11)*

Integrated Ph.D.	Biological Sciences	Chemical Sciences	Mathematical Sciences	Physical Sciences
[Program code] Seats Available	[1101] 8+4+2+1	[1102] 8+4+2+1	[1103] 6+3+2+1	[1104] 6+3+2+1
Paper Code(s)	BL,BT,CY,MA,PH	BL,CY,PH	MA,MS	PH

IIT Bombay (Zone-12)*

M.Sc. (4 semesters)	Applied Geology	Applied Geophysics	Applied Statistics and Informatics	BioTechnology	Chemistry	Mathematics	Physics
[Program code] Seats Available	[1201] 15+8+5+2	[1202] 8+5+2+1	[1203] 19+10+5+3	[1204] 14+8+4+2 ST(1)	[1205] 20+11+6+3	[1206] 15+8+5+2	[1207] 16+8+5+3
Paper Code(s)	GG	GG	MS	BT	CY	MA	PH

M.Sc. – Ph.D. dual degree	Applied Geology	Applied Geophysics	BioTechnology	Chemistry	Energy	Environmental Science & Engineering	Operations Research	Physics
[Program code] Seats Available	[1208] 2+1+1+0 GEN (1)	[1209] 2+1+1+0 SC (1)	[1210] 4+2+1+1	[1211] 3+1+1+0 SC(1)	[1212] 9+5+3+1 GEN(1) ST(1)	[1213] 5+3+1+1 OBC (1)	[1214] 6+4+1+1 GEN(1), OBC(1)	[1215] 4+2+1+1
Paper Code(s)	GG	GG	BL,CY,BT,PH	CY	CY,MA,PH	BT,CY,MA,PH	MA,MS	PH

M.Sc.-M.Tech. (8 semesters)	M.Sc.(Physics)-M.Tech. (Materials Sciences with specialization in Nano-Science & Tech.)
[Program code] Seats Available	[1216] 4+2+1+1
Paper Code(s)	PH

IIT Delhi (Zone-13)*

M.Sc. (4 semesters)	Chemistry	Mathematics	Physics
[Program code] Seats Available	[1301] 27+15+8+4 GEN(1)	[1302] 27+15+8+4 GEN(1), OBC(1)	[1303] 27+15+8+4 OBC(1), ST(1)
Paper Code(s)	CY	MA	PH

IIT Guwahati (Zone-14)*

M.Sc. (4 semesters)	Chemistry	Mathematics & Computing	Physics
[Program code] Seats Available	[1401] 24+13+7+4 OBC-NCL(1)	[1402] 24+13+7+4 GEN(1),ST(1)	[1403] 24+13+7+4 GEN(1)
Paper Code(s)	CY	MA	PH

IIT Kanpur (Zone-15)*

M.Sc. (4 semesters)	Chemistry	Mathematics	Physics	Statistics
[Program code] Seats Available	[1501] 21+11+6+3	[1502] 20+11+6+3	[1503] 15+8+5+2	[1504] 20+11+6+3
Paper Code(s)	CY	MA	PH	MS

M.Sc.- Ph.D. dual degree	Physics
[Program code] Seats Available	[1505] 7+4+2+1
Paper Code(s)	PH

IIT Kharagpur (Zone-16)*

Joint M.Sc.- Ph.D.	Chemistry	Geology	Mathematics	Physics
[Program code] Seats Available	[1601] 23+12+7+4 OBC(1)	[1602] 15+8+5+2 SC(1)	[1603] 15+8+5+2 GEN(1)	[1604] 23+12+7+4 ST(1)
Paper Code(s)	CY	GG	MA	PH

IIT Madras (Zone-17)*

M.Sc. (4 semesters)	Chemistry	Mathematics	Physics
[Program code] Seats Available	[1701] 27+15+8+4 OBC(1)	[1702] 27+15+8+4 GEN(1) OBC(1)	[1703] 22+12+7+3 GEN(1) OBC(1)
Paper Code(s)	CY	MA	PH

IIT Roorkee (Zone-18)*

M.Sc. (4 semesters)	Applied Geology	Applied Mathematics	BioTechnology	Chemistry	Industrial Mathematics and Informatics	Physics
[Program code] Seats Available	[1801] 8+4+2+1 GEN(1)	[1802] 8+4+2+1	[1803] 18+10+6+3 GEN(1)	[1804] 13+6+4+2 GEN(1)	[1805] 8+4+2+1 GEN(1)	[1806] 13+6+4+2 GEN(1)
Paper Code(s)	GG	MA	BT	CY	MA	PH

IIT Bhubaneswar (Zone-19)*

Joint M.Sc.-Ph.D.	Chemistry	Mathematics	Physics	Geology
[Program code] Seats Available	[1901] 10+5+3+2 SC(1)	[1902] 10+5+3+2 GEN(1)	[1903] 10+5+3+2 OBC(1)	[1904] 10+5+3+2
Paper Code(s)	CY	MA	PH	GG

IIT Gandhinagar (Zone-20)*

M.Sc. (4 semesters)	Chemistry	Mathematics	Physics
[Program code] Seats Available	[2001] 4+3+2+1	[2002] 4+3+2+1	[2003] 7+2+1+0 GEN(1)
Paper Code(s)	CY	MA	PH

IIT Hyderabad (Zone-21)*

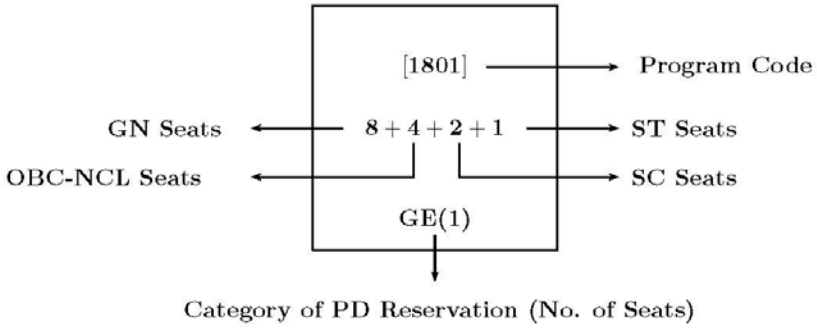
M.Sc. (4 semesters)	Chemistry	Mathematics	Physics
[Program code] Seats Available	[2101] 14+8+5+2 GEN(1)	[2102] 7+4+2+1	[2103] 10+4+3+2 GEN(1)
Paper Code(s)	CY	MA	PH

IIT Indore (Zone-22)*

M.Sc. (4 semesters)	Chemistry	Physics
[Program code] Seats Available	[2201] 6+3+2+1	[2202] 6+3+2+1
Paper Code(s)	CY	PH

***The Number of seats is subject to change.

Explanation of Cells (Appendix-I)



Appendix-II: Test Papers with Codes and Corresponding Academic Programs and Minimum Educational Qualifications for Admission

Test Paper (Test paper code)	Academic Program(s)	Institute(s)	Minimum Educational Qualification(s) for Admission
Biological Sciences (BL)	Integrated Ph.D. in Biological Sciences	IISc Bangalore	Bachelor degree in Biology or Chemistry or Physics or Mathematics. The candidates should have passed Biology at the Higher Secondary (10+2) level.
	Integrated Ph.D.in Chemical Sciences	IISc Bangalore	B.Sc. or an equivalent degree with Chemistry as one of the subjects. The candidates should have passed mathematics at the PUC or the Higher Secondary (10+2) level.
	M.Sc.- Ph.D. Dual Degree in BioTechnology	IITB	Bachelor degree in any branch of Science/ Agriculture / Pharmacy / Veterinary / Engineering / Medicine (MBBS). **T**he candidate should have passed Mathematics at the Higher Secondary (10+2) level.
BioTechnology (BT)	Integrated Ph.D.in Biological Sciences	IISc Bangalore	Bachelor degree in Biology or Chemistry or Physics or Mathematics. The candidates should have passed Biology at the Higher Secondary (10+2) level.
	M.Sc. BioTechnology	IITB, IITR	Bachelor degree in any branch of Science/ Agriculture / Pharmacy / Veterinary / Engineering / Medicine (MBBS). **NOTE:** For IITB only, the candidates should have passed Mathematics at the Higher Secondary (10+2) level.
	M.Sc.- Ph.D. Dual Degree in BioTechnology	IITB	
	M.Sc.- Ph.D. Dual Degree in Environmental Science & Engineering	IITB	Bachelor degree with any one of Biology, BioTechnology, Chemistry, Mathematics and Physics for two years/four semesters, and any one of the other four subjects for at least one year/two semesters. The candidate should have passed Mathematics at Higher Secondary (10 + 2) level.
Chemistry (CY)	Integrated Ph.D. in Chemical Sciences	IISc Bangalore	B.Sc. or an equivalent degree with Chemistry as one of the subjects. The candidates should have passed mathematics at the PUC or Higher Secondary (10+2) level.
	Integrated Ph.D. in Biological Sciences	IISc Bangalore	Bachelor degree in Biology or Chemistry or Physics or Mathematics. The candidates should have passed Biology at the Higher Secondary (10+2) level.
	M.Sc. Chemistry	IITG	B.Sc.(10+2+3) degree **with** Major/Honors in Chemistry with Mathematics and Physics for at least two years/four semesters OR B.Sc.(10+2+3) degree **without** Major/Honors in Chemistry with Mathematics and Physics for at least two years/four semesters, must have the concerned degree with Chemistry as a subject for three years/six semesters and Mathematics and Physics for at least two years/four semesters.
	M.Sc. Chemistry	IITB, IITD, IITGN, IITH, IITI, IITK, IITM, IITR	Bachelor degree with Chemistry as a subject for three years/six semesters and should have passed Mathematics at the Higher Secondary (10+2) level.
	Joint M.Sc.- Ph.D. in Chemistry	IITBBS, IITKgp	
	M.Sc.- Ph.D. Dual Degree in Chemistry	IITB	

Test Paper (Test paper code)	Academic Program(s)	Institute(s)	Minimum Educational Qualification(s) for Admission
	M.Sc.- Ph.D. Dual Degree in Energy	IITB	Bachelor degree with any one of Chemistry, Mathematics and Physics for two years/four semesters and any one of the remaining two subjects for at least one year/ two semesters.
	M.Sc.- Ph.D. Dual Degree in Environmental Science & Engineering	IITB	Bachelor degree with any one of Biology, BioTechnology, Chemistry, Mathematics and Physics for two years/four semesters, and any one of the other four subjects for at least one year/two semesters. The candidate should have passed Mathematics at Higher Secondary (10 + 2) level.
	M.Sc.- Ph.D. Dual Degree in BioTechnology	IITB	Bachelor degree in any branch of Science/ Agriculture / Pharmacy / Veterinary / Engineering / Medicine (MBBS). **T**he candidate should have passed Mathematics at the Higher Secondary (10+2) level.
Geology (GG)	M.Sc. Applied Geology	IITB, IITR	Bachelor degree with Geology as a subject for three years/six semesters and any two subjects among Mathematics, Physics, Chemistry, and Biological Science. The candidate should have passed Mathematics at Higher Secondary (10+2) level.
	Joint M.Sc.- Ph.D. in Geology	IITKgp	
	M.Sc.- Ph.D. Dual Degree in Applied Geology	IITB	
	Joint M.Sc.- Ph.D. in Earth Science	IITBBS	Bachelor degree with Geology as a subject for three years/six semesters and any two subjects among Mathematics, Physics and Chemistry. The candidate should have passed Mathematics at Higher Secondary (10+2) level.
Mathematics (MA)	Integrated Ph.D. in Mathematical Sciences	IISc Bangalore	Bachelor degree in science or engineering with mathematics as a subject for three years/six semesters.
	Integrated Ph.D. in Biological Sciences	IISc Bangalore	Bachelor degree in Biology or Chemistry or Physics or Mathematics with Biology at the Higher Secondary (10+2) level.
	M.Sc. Mathematics	IITB, IITD, IITGN, IITH IITK, IITM	Bachelor degree with Mathematics as a subject for at least two years/four semesters.
	M.Sc. Mathematics & Computing	IITG	B.Sc.(10+2+3) degree **with** Major/Honors in Mathematics OR B.Sc. (10+2+3) degree **without** Major/Honors in Mathematics, must have the concerned degree with Mathematics as a subject for two years/four semesters
	M.Sc. Applied Mathematics	IITR	Bachelor degree with Mathematics / Statistics as a subject for at least two years/four semesters.
	M.Sc. Industrial Mathematics and Informatics	IITR	
	Joint M.Sc.- Ph.D. in Mathematics	IITBBS, IITKgp	
	M.Sc.- Ph.D. Dual Degree in Operations Research	IITB	
	M.Sc.- Ph.D. Dual Degree in Environmental Science & Engineering	IITB	Bachelor degree with any one of Biology, BioTechnology, Chemistry, Mathematics and Physics for two years/four semesters, and any one of the other four subjects for at least one year/two semesters. The candidate should have passed Mathematics at Higher Secondary (10 + 2) level.
	M.Sc.- Ph.D. Dual Degree in Energy	IITB	Bachelor degree with any one of Chemistry, Mathematics and Physics for two years/four semesters and any one of the remaining two subjects for at least one year/ two semesters.

Test Paper (Test paper code)	Academic Program(s)	Institute(s)	Minimum Educational Qualification(s) for Admission
Mathematical Statistics (MS)	Integrated Ph.D. in Mathematical Sciences	IISc Bangalore	Bachelor degree in Science or Engineering with Mathematics as a subject for three years or six semesters.
	M.Sc. Applied Statistics and Informatics	IITB	Bachelor degree with either Mathematics or Statistics as a subject for at least two years or four semesters.
	M.Sc.- Ph.D. Dual Degree in Operations Research	IITB	
	M.Sc. Statistics	IITK	Bachelor degree with Statistics as a subject for at least two years or four semesters
PHYSICS (PH)	Integrated Ph.D. in Physical Sciences	IISc Bangalore	B.Sc. or equivalent degree with Physics as one of the main subjects.
	Integrated Ph.D. in Biological Sciences	IISc Bangalore	Bachelor degree in Biology or Chemistry or Physics or Mathematics. The candidates should have passed Biology at the Higher Secondary (10+2) level.
	Integrated Ph.D. in Chemical Sciences	IISc Bangalore	B.Sc. or an equivalent degree with Chemistry as one of the subjects. The candidates should have passed mathematics at the PUC or Higher Secondary (10+2) level.
	M.Sc. Physics	IITH	Bachelor degree with Physics as a major subject and Mathematics as one of the subjects.
	M.Sc. Physics	IITG	B.Sc.(10+2+3) degree **with** Major/Honors in Physics with Mathematics for at least two years/four semesters OR B.Sc.(10+2+3) degree **without** Major/Honors in Physics with Mathematics for at least two years/four semesters, must have the concerned degree with Physics as a subject for at least two years/four semesters and Mathematics for at least one year/two semesters
	M.Sc. Physics	IITB, IITD, IITI, IITK, IITM, IITR	Bachelor degree with Physics as a subject for at least two years/four semesters and Mathematics for at least one year/two semesters.
	Joint M.Sc.- Ph.D. in Physics	IITBBS, IITKgp	
	M.Sc.- Ph.D. Dual Degree in Physics	IITB, IITK	
	M.Sc.(Physics)-M.Tech (Materials Sciences with specialization in Nano-Science & Tech.)	IITB	
	M.Sc. Applied Geophysics	IITB	Bachelor degree with Physics and Mathematics/Mathematical Physics as subjects for two years/four semesters and at least one of them as subject for three years/six semesters.
	M.Sc.- Ph.D. Dual Degree in Applied Geophysics	IITB	
	M.Sc.- Ph.D. Dual Degree in Energy	IITB	Bachelor degree with any one of Chemistry, Mathematics and Physics for two years/four semesters and any one of the remaining two subjects for at least one year/ two semesters.
	M.Sc.- Ph.D. Dual Degree in Environmental Science & Engineering	IITB	Bachelor degree with any one of Biology, BioTechnology, Chemistry, Mathematics and Physics for two years/four semesters, and any one of the other four subjects for at least one year/two semesters. The candidate should have passed Mathematics at Higher Secondary (10 + 2) level.
	M.Sc.- Ph.D. Dual Degree in BioTechnology	IITB	Bachelor degree in any branch of Science/ Agriculture / Pharmacy / Veterinary / Engineering / Medicine (MBBS). The candidate should have passed Mathematics at the Higher Secondary (10+2) level.

Appendix–III: EXAMINATION CITIES / TOWNS FOR JAM 2014

IISc Bangalore Zone

Test City	Code
Bengaluru	101
Hubli	102
Kollam	103
Kottayam	104
Kozhikode	105
Lakshadweep	106
Mangalore	107
Palakkad	108
Port Blair	109
Thrissur	110

IIT Bombay Zone

Test City	Code
Ahmedabad	201
Goa	202
Hyderabad	203
Mumbai	204
Nagpur	205
Nanded	206
Pune	207
Vadodara	208

IIT Delhi Zone

Test City	Code
Delhi	301
Faridabad	302
Gurgaon	303
Indore	304
Jaipur	305

IIT Guwahati Zone

Test City	Code
Asansol	401
Dhanbad	402
Durgapur	403
Guwahati	404
Jorhat	405
Kalyani	406
Patna	407
Siliguri	408

IIT Kanpur Zone

Test City	Code
Agra	501
Allahabad	502
Bareilly	503
Bhopal	504
Gorakhpur	505
Kanpur	506
Lucknow	507
Varanasi	508

IIT Kharagpur Zone

Test City	Code
Bhubaneswar	601
Kharagpur	602
Kolkata	603
Raipur	604
Ranchi	605
Vijayawada	606
Vishakapatnam	607

IIT Madras Zone

Test City	Code
Chennai	701
Coimbatore	702
Ernakulam	703
Kadapa	704
Madurai	705
Nellore	706
Thiruvananthapuram	707
Tiruchirapalli	708

IIT Roorkee Zone

Test City	Code
Chandigarh	801
Haldwani	802
Jalandhar	803
Kurukshetra	804
Noida	805
Roorkee	806

Appendix-IV

AUTHORITIES WHO MAY ISSUE SC / ST / OBC (NON CREAMY LAYER) CERTIFICATES

SC/ST/OBC (Non-Creamy Layer) candidates should submit a certificate issued by any of the following authorities:

District Magistrate / Additional District Magistrate / Collector / Deputy Commissioner / Additional Deputy Commissioner / Deputy Collector /1st Class Stipendary Magistrate / Sub-Divisional Magistrate / Taluka Magistrate / Executive Magistrate / Extra Assistant Commissioner (not below the rank of 1st class Stipendary Magistrate) / Chief Presidency Magistrate / Additional Chief Presidency Magistrate / Presidency Magistrate / Revenue Officer not below the rank of Tehsildar / Sub-Divisional Officer of the area where the candidate and / or his / her family normally resides / Administrator / Secretary to Administrator / Development Officer (Lakshadweep Island).

(Certificate issued by any other authority will be rejected)

IMPORTANT NOTE

- In all matters concerning JAM 2014, the decision of the **Organizing Institute** or the **Organizing Chairman, JAM 2014** will be final and binding on all the applicants.
- Although JAM 2014 is held at different centers across country, **Indian Institute of Technology Kanpur** is the **Organizing Institute**, and has the overall responsibility of conducting JAM 2014. In case of any claims or disputes arising in respect of JAM 2014, it is hereby made absolutely clear that the Lucknow Bench of Allahabad High Court alone shall have the exclusive jurisdiction to entertain and settle any such disputes and claims.

Appendix-V-Proforma for Other Backward Class (Non-Creamy Layer) Certificate

(CERTIFICATE TO BE PRODUCED BY OTHER BACKWARD CLASSES APPLYING FOR ADMISSIONS TO CENTRAL EDUCATIONAL INSTITUTIONS (CEIs), UNDER THE GOVERNMENT OF INDIA)

This is to certify that Shri/Smt./Kum. _____ Son/Daughter of Shri/Smt. _____ of Village/Town _____ District/Division _____ in the _____ State belongs to the _____ Community which is recognized as a backward class under:

(i) Resolution No. 12011/68/93-BCC(C) dated 10/09/93 published in the Gazette of India Extraordinary Part I Section I No. 186 dated 13/09/93.
(ii) Resolution No. 12011/9/94-BCC dated 19/10/94 published in the Gazette of India Extraordinary Part I Section I No. 163 dated 20/10/94.
(iii) Resolution No. 12011/7/95-BCC dated 24/05/95 published in the Gazette of India Extraordinary Part I Section I No. 88 dated 25/05/95.
(iv) Resolution No. 12011/96/94-BCC dated 9/03/96.
(v) Resolution No. 12011/44/96-BCC dated 6/12/96 published in the Gazette of India Extraordinary Part I Section I No. 210 dated 11/12/96.
(vi) Resolution No. 12011/13/97-BCC dated 03/12/97.
(vii) Resolution No. 12011/99/94-BCC dated 11/12/97.
(viii) Resolution No. 12011/68/98-BCC dated 27/10/99.
(ix) Resolution No. 12011/88/98-BCC dated 6/12/99 published in the Gazette of India Extraordinary Part I Section I No. 270 dated 06/12/99.
(x) Resolution No. 12011/36/99-BCC dated 04/04/2000 published in the Gazette of India Extraordinary Part I Section I No. 71 dated 04/04/2000.
(xi) Resolution No. 12011/44/99-BCC dated 21/09/2000 published in the Gazette of India Extraordinary Part I Section I No. 210 dated 21/09/2000.
(xii) Resolution No. 12015/9/2000-BCC dated 06/09/2001.
(xiii) Resolution No. 12011/1/2001-BCC dated 19/06/2003.
(xiv) Resolution No. 12011/4/2002-BCC dated 13/01/2004.
(xv) Resolution No. 12011/9/2004-BCC dated 16/01/2006 published in the Gazette of India Extraordinary Part I Section I No. 210 dated 16/01/2006.
(xvi) Resolution No. 12011/14/2004-BCC dated 12/03/2007 published in the Gazette of India Extraordinary Part I Section I No. 67 dated 12/03/2007.
(xvii) Resolution No. 12015/2/2007-BCC dated 18/08/2010.
(xviii) Resolution No. 12015/13/2010-BCC dated 08/12/2011.

Shri/Smt./Kum. _____ and/or his family ordinarily reside(s) in the _____ District/Division of _____ State. This is also to certify that he/she **does not belong to the persons/sections (Creamy Layer)** mentioned in Column 3 of the Schedule to the Government of India, Department of Personnel & Training O.M. No. 36012/22/93-Estt. (SCT) dated 08/09/93, modified vide OM No. 36033/3/2004-Estt.(Res.) dated 09/03/2004, further modified vide OM No. 36033/3/2004-Estt. (Res.) dated 14/10/2008 or the latest notification of the Government of India.

This certificate is being issued based on the annual income / status of the parents / guardian of the applicant as on financial year ending 31st March, 2013.

Dated:

District Magistrate/ Deputy Commissioner
Seal Competent Authority

NOTE:

(a) The term 'Ordinarily' used here will have the same meaning as in Section 20 of the Representation of the People Act, 1950.
(b) The authorities competent to issue Caste Certificates are indicated below:
  (i) District Magistrate / Additional Magistrate / Collector / Deputy Commissioner / Additional Deputy Commissioner / Deputy Collector / Ist Class Stipendiary Magistrate / Sub-Divisional Magistrate / Taluka Magistrate / Executive Magistrate / Extra Assistant Commissioner (not below the rank of 1st Class Stipendiary Magistrate).
  (ii) Chief Presidency Magistrate / Additional Chief Presidency Magistrate / Presidency Magistrate.
  (iii) Revenue Officer not below the rank of Tehsildar and
  (iv) Sub-Divisional Officer of the area where the candidate and / or his/her family resides.

The date of issue of OBC (NCL) certificate should be after 31st March, 2013

IMPORTANT DATES FOR JAM 2014

Commencement of Online Registration	16th September, 2013 (Monday) at 9:00 am
Last date for payment of fee through challan	12th October, 2013 (Saturday)
Last date for closure of Online Registration on the website	12th October, 2013 (Saturday)
Last date for Online Registration on the website / website closure.	16th October 2013, (Wednesday) at 23:59 hrs
Last date for receipt of completed Online Registration Form along with two Photographs, payment details and SC/ST/PD and OBC(NCL) Certificate(s) at IIT Kanpur	23rd October, 2013 (Wednesday)
Date of JAM 2014 Test	9th February, 2014 (Sunday)
Announcement of the Results of JAM 2014	16th April, 2014 (Wednesday) at 17:00 hrs
Issue of Application Form(s) for admission by JAM Office of IIT Kanpur / downloading from the website of IIT Kanpur	17th – 24th April, (Thursday-Thursday) 2014*
Last date for receipt of completed application forms for admission along with Demand Draft of Rs. 600/- at IIT Kanpur	30th April, 2014 (Wednesday)
Interview at IISc/IITB/IITK/IITM	
Declaration of First Admission List	
Declaration of Second Admission List	
Declaration of Third and Final Admission List and the closure of admissions through JAM 2014	

* Working hours 9:00 AM to 5:30 PM

CONTACT ADDRESSES OF CHAIRPERSONS, JAM 2014

Institute	E–mail	Website	Phone / Fax
IISc Bangalore, Bengaluru -560012	jam@gate.iisc.ernet.in	gate.iisc.ernet.in/jam	(080) 22932392/23601227
IIT Bombay, Powai, Mumbai-400076	jam@iitb.ac.in	www.iitb.ac.in/jam	(022) 25767022 / 25722674
IIT Delhi,Hauz Khas,New Delhi-110016	jam@admin.iitd.ac.in	gate.iitd.ac.in/jam	(011) 26591749 / 26581579
IIT Guwahati, Guwahati-781039	jam@iitg.ernet.in	www.iitg.ernet.in/jam	(0361) 2582751 / 2582755
IIT Kanpur, Kanpur-208016	jam@iitk.ac.in	gate.iitk.ac.in/jam	(0512) 2597412 / 2590932
IIT Kharagpur, Kharagpur-721302	gate@adm.iitkgp.ernet.in	http://jam.iitkgp.ac.in/	(03222) 282091 / 278243
IIT Madras, Chennai-600036	jam@iitm.ac.in	jam.iitm.ac.in	(044) 22578200 / 22578204
IIT Roorkee, Roorkee-247667	jam@iitr.ac.in	www.iitr.ac.in/jam	(01332) 284531 / 285707