

JOINT ENTRANCE SCREENING TEST - 2014



For Ph.D. Programmes in Physics / Theoretical Computer Science / Neuroscience

A common qualifying test for admissions to the Ph.D. programmes in the following research institutes in India. Qualifying in JEST does not entitle an applicant to get a Research Fellowship. Using the JEST results, each institute will call a limited number of candidates for further selection depending on their requirements. All selected candidates will receive Research Fellowships from the respective institutes.

- 1. ARIES:** Aryabhatta Research Institute of Observational Sciences, Nainital: Astronomy & Astrophysics, & Atmospheric Physics.
- 2. HBNI:** Homi Bhabha National Institute, Mumbai: a Deemed University.
- 3. HRI:** Harish-Chandra Research Institute, Allahabad: Theoretical Physics & Astrophysics.
- 4. ICTS-TIFR:** International Centre for Theoretical Sciences, TIFR Bangalore: Astrophysical Relativity, Data Assimilation & Dynamical Systems, Statistical Physics & Turbulence, String theory & Quantum Gravity.
- 5. IGCAR:** Indira Gandhi Centre for Atomic Research, Kalpakkam: Solid State Phase transformations, Superconductivity, Structure & dynamics of soft condensed matter, Band structure studies, Accelerators based Irradiation induced phenomena, Low-dimensional systems, Physics of interfaces, Nano-materials, Thin films technology & Theoretical physics.
- 6. IIA:** Indian Institute of Astrophysics, Bangalore: Astronomy & Astrophysics, Astronomical Instrumentation, Atomic Physics.
- 7. IISc:** Indian Institute of Science, Bangalore: Condensed Matter Physics (Experiments & Theory), Astronomy & Astrophysics (Theoretical), Atomic & Optical Physics (Experimental), Bio-crystallography & Bioinformatics, & High Energy Physics (Theoretical).
- 8. IISER MOHALI:** Indian Institute of Science Education and Research, Mohali: Quantum Information (Experiment & Theory), Complex systems & Networks, Theoretical Astrophysics & Cosmology, String theory, Statistical physics, Quantum thermodynamics, Condensed Matter (Theory & Experiment) NMR-Methodology, Ultra-fast Physics, Low temperature physics.
- 9. IISER PUNE:** Indian Institute of Science Education and Research, Pune: Condensed Matter Physics, Computational Material Science, Nanotechnology, Atomic Physics & Quantum Optics, Non-linear Dynamics, Astrophysics, Particle Physics & Field Theory, Solar & Plasma Physics, Quantum Information Processing, Soft Matter.
- 10. IISER THIRUVANANTHAPURAM:** Indian Institute of Science Education and Research, Thiruvananthapuram: Experimental: Magnetism, Superconductivity, Nanoscience, Photonics, Semiconductor Physics, Surface Sciences, Nano-scale Plasmonics, Ultrafast Spectroscopy; Theory: Cosmology, Gravitational Waves, Quantum Information, Statistical Physics.
- 11. IMSc:** The Institute of Mathematical Sciences, Chennai: Theoretical Physics, & Theoretical Computer Science.
- 12. IOP:** Institute of Physics, Bhubaneswar: Physics (Condensed Matter, Nuclear and High Energy Physics) & Accelerator-based Research.
- 13. IPR:** Institute for Plasma Research, Gandhinagar: Theoretical & Experimental Plasma Physics, Fusion related Physics & Industrial Plasma Physics.
- 14. IUCAA:** Inter-University Centre for Astronomy and Astrophysics, Pune: Physics, Astronomy & Astrophysics.
- 15. JNCASR:** Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore: Experimental & Theoretical Condensed Matter Physics, Statistical Mechanics, Materials Science.
- 16. NBRC:** National Brain Research Centre, Gurgaon: Neurosciences: Systems, computational, cognitive & molecular. Neurocomputing, neuroinformatics & neuroimaging.
- 17. NCRA-TIFR:** National Centre for Radio Astrophysics, TIFR, Pune: Astronomy & Astrophysics.
- 18. NISER:** National Institute of Science Education and Research, Bhubaneswar: String theory, Lattice QCD, Experimental High Energy Physics, Soft Condensed Matter Physics, Electronic structure, Statistical Mechanics, Superconductivity & Magnetism, Nano-science, Non-linear Optics, Ultracold Atoms, Quantum Optics & Quantum Information.
- 19. PRL:** Physical Research Laboratory, Ahmedabad: Theoretical Physics, Astronomy & Astrophysics, Solar Physics, Space & Atmospheric Sciences, Planetary Science & Geo-Sciences.
- 20. RRCAT:** Raja Ramanna Centre for Advanced Technology, Indore: Lasers & their Applications, Laser Plasma Interaction, Cold Atom Physics, Condensed Matter Physics (Superconductivity & Magnetism, Crystals & Thin Films), Nanomaterials & Applications, Non-linear & Ultrafast Optical Studies, Beam Physics, & Free Electron Laser.
- 21. RRI:** Raman Research Institute, Bangalore: Astronomy & Astrophysics, Light & Matter Physics, Soft Condensed Matter Physics (Liquid Crystals, Physics in Biology), & Theoretical Physics.
- 22. SINP:** Saha Institute of Nuclear Physics, Kolkata: Condensed Matter Physics, Nuclear Physics, High Energy Physics, Astroparticle Physics, Quantum Gravity, String Theory, Mathematical Physics, Surface Science & Plasma Physics.
- 23. SNBNCBS:** Satyendra Nath Bose National Centre for Basic Sciences, Kolkata: Astrophysics & Cosmology, Chemical & Biological Physics, Condensed Matter Physics & Material Science, High Energy Physics & Quantum Field Theory, Mathematical Physics, Nanosciences, Quantum Optics & Quantum Information, Statistical Physics, Complex Systems.
- 24. TIFR- TCIS:** TIFR Centre for Interdisciplinary Sciences, Hyderabad: Condensed Matter Physics & Materials Science of Nonequilibrium, Soft & Living matter, Fluid Dynamics, Intense Laser-matter interactions, Computational Physics, Statistical physics, NMR of Biophysical & other systems
- 25. TIFR:** Tata Institute of Fundamental Research, Mumbai: Astronomy & Astrophysics, Condensed Matter Physics & Material Science, High Energy Physics, Nuclear & Atomic Physics, Theoretical Physics
- 26. UGC-DAE CSR:** UGC-DAE Consortium for Scientific Research, Indore: Thin Films, X-ray, Optical & Electron Spectroscopies Electrical, Magnetic & Thermal Properties at Low Temperatures & High Magnetic Fields, Neutron Diffraction; Positron Annihilation, Mossbauer, Gamma Ray Spectroscopies; Experimental Nuclear Physics/ Reactions..
- 27. VECC:** Variable Energy Cyclotron Centre, Kolkata: Accelerator Physics, Condensed Matter Physics & Materials Science, Nuclear Physics (Experiments and Theory), Relativistic Heavy Ion Collisions & QCD Phase Transition (Experiments, Theory), & Physics of Neutrinos (Experiments).

Visit <http://www.jest.org.in> to apply and for more information

Eligibility

Students who expect to complete their final examination by August 2014 are also eligible to apply.

Minimum Qualifications and Selection Procedures

Ph.D. Programme

Physics: M.Sc. in Physics or M.Sc. / M.E. / M.Tech. in related disciplines. Candidates with M.Sc. in Mathematics / Applied Physics / Applied Mathematics / Optics and Photonics / Instrumentation / Electronics will also be considered at IIA. Graduates with a B.E. or B.Tech. will also be considered at IISc, IMSc, ICTS-TIFR, IISER Mohali, IISER Pune, IUCAA, JNCASR, NCRA-TIFR, TIFR-TCIS, RRI, SNBNCBS and NISER. B.E./B.Tech./BCA/B.Sc. students can also apply for the integrated M.Sc.-Ph.D. programme, see below. In addition, talented final year B.Sc. and first year M.Sc. (in Physics / Electronics / Astronomy / Applied Mathematics) students may also apply to be pre-selected for research scholarship at IUCAA. Similar pre-selection is open at SNBNCBS for candidates who also have specialization in Bio-Physics, Optics and Opto-Electronics. At IPR, candidates should have a Master's degree in Physics, Engineering Physics or Applied Physics. At TIFR, only B.Tech (Engineering Physics) and M.Sc. Physics are eligible.

Theoretical Computer Science/ Neuroscience: M.Sc./M.E./M.Tech./M.C.A. in Computer Science and related disciplines, and should be interested in the mathematical aspects of computer science. Visit website of IMSc for further details. M.Sc (Physics/Mathematics), B.E/B. Tech/ M.C.A in Computer Science for Ph.D. in Neuroscience at NBRC.

Integrated M.Sc./M.Tech. – Ph.D. Programme

At HRI, IISER Pune, ICTS-TIFR, IISER Thiruvananthapuram, IISc Bangalore, NCRA-TIFR, TIFR-TCIS, TIFR and SNBNCBS, candidates with a Bachelor's degree will also be considered for the integrated M.Sc. – Ph.D. programme in Physics. At IMSc, graduates with B.Sc. / B.E. / B. Tech. degree will also be considered for admission to M.Sc. (Research) programme in Physics and Theoretical Computer Science, as part of an integrated Ph.D. programme. At SNBNCBS, graduates with B.Sc. (Physics/Mathematics) / B.E. / B.Tech. degree will be considered for the integrated Post-B.Sc.-Ph.D. programme in subject areas mentioned above. At NBRC, B.Sc. (Physics/Mathematics) & B.E./B.Techi (Computer Science) will be considered for integrated M.Sc-Ph.D in Neuroscience.

Integrated M.Tech.– Ph.D. Programme at IIA: Graduates with M.Sc. (Physics / Applied Physics) / Post-B.Sc. (Hons) B.Tech. in Optics and Photonics, Radiophysics and Electronics / B.E. / B.Tech. degree in subjects mentioned above will be considered.

How to Apply

Candidates for Physics / Theoretical Computer Science / Neuroscience can apply for JEST-2014 ON-LINE through <http://www.jest.org.in>. Email applications and photocopies of printed applications will not be accepted. Details regarding the on-going programmes at different institutions are available at **JEST-2014 website**. **Application Fee of Rs. 300/- (Rs. 150/- for SC/ST) is payable.** Visit **JEST-2014 website** for further details.

Test Centres

Ahmedabad, Allahabad, Aligarh, Bangalore, Bardhaman, Bhopal, Bhubaneswar, Chandigarh, Chennai, Delhi, Goa, Guwahati, Hyderabad, Indore, Jaipur, Kanpur, Kharagpur, Kochi, Kolkata, Madurai, Mumbai, Nagpur, Nainital, Patna, Pune, Raipur, Roorkee, Sambalpur, Silchar, Siliguri, Srinagar, Thiruvananthapuram, Udaipur, and Visakhapatnam.

Important Dates

Website opening and on-line submission of applications will be enabled at <http://www.jest.org.in> from **November 11, 2013**.

Last date of ON-LINE submission of applications is **December 10, 2013**.

JEST - 2014 (written test) will be held on Sunday, February 16, 2014, from 10.00 a.m. to 1.00 p.m.

Candidates seeking admission to any of the institutes for a Ph. D. Programme in Physics / Theoretical Computer Science / Neuroscience may appear for JEST (written test in Physics or Theoretical Computer Science as applicable) at the test centre chosen by the candidate.