

**Combined Entrance Examination
conducted by
Jawaharlal Nehru University
for admission to
M.Sc. Biotechnology Programme**

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PROSPECTUS

**ACADEMIC SESSION
2010-11**

Check List

Before submitting/posting the completed application form please check/note that:-

- ☞ **PLEASE REFOLD THE APPLICATION FORM ONLY WHERE IT WAS ORIGINALLY FOLDED. DO NOT STAPLE, PIN OR STITCH ANY DOCUMENTS WITH THE APPLICATION FORM. SEND THE BANK DRAFT IN THE ENVELOPE PROVIDED. KEEP THEM LOOSE ALONG WITH THE APPLICATION FORM INSIDE THE ENVELOPE.**
- ☞ **Please fill the form in your own handwriting.**
- ☞ You have noted down your Application Form Number for future correspondence or retained a photocopy of the filled in Application Form;
- ☞ Your Application Form is complete in all respects;
- ☞ You have pasted recent (not more than two months old) passport size photograph in the Application Form.
- ☞ **You have passed the qualifying examination in 2008 or thereafter or you are appearing in 2010. In other words, those who have passed the qualifying examination PRIOR to 2008 are NOT eligible to apply;**
- ☞ **You fulfil the eligibility requirements as prescribed in the Prospectus. You should, appear in the entrance examination only if you fulfil the eligibility requirements for M. Sc. Biotechnology Programme. Despite this caution, in case you do not meet the minimum eligibility criteria and still appear in the entrance examination, you will do so at your own risk and cost, and if at any stage, it is found that you do not fulfil the minimum eligibility requirements, the admission, if granted to you, shall be cancelled ipso facto.**
- ☞ **Examination Fee:** you have enclosed a Demand Draft drawn after 1st February, 2010 and valid for six months in favour of “**JAWAHARLAL NEHRU UNIVERSITY**” payable at **New Delhi** for the amount indicated below towards the entrance examination fee.

**General Category Candidates
including OBC Candidates**

Rs. 600/-

SC/ST/PH/Blind Candidates

Rs. 300/-

Foreign Nationals

US\$ 25.00 or Rs.1250/-

- ☞ Application Forms can be submitted by Registered Post to Section Officer (Admissions), Room No.28, Administrative Block, Jawaharlal Nehru University, New Delhi - 110067 or dropped in the Box in the Administrative Block of the University. The application forms must reach the JNU on or before March 15, 2010. JNU will not accept responsibility for any postal delay or irregularity or loss in postal transit.

PLEASE DO NOT SEND YOUR APPLICATION FORM THROUGH PRIVATE COURIER SERVICES

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I. GENERAL

Biotechnology is a multidisciplinary area on the educational scene and programmes have been developed to meet the growing demand for trained manpower for any meaningful Biotechnology activity in the country. The programmes are designed to expose the students to recent exciting developments in the area of genetic engineering and biotechnology and their exploitation in industry, agriculture and medicine.

Jawaharlal Nehru University will hold a Combined Entrance Examination for admission to 2-Year M.Sc. Programme in Biotechnology on behalf of following participating Universities:

1. University of Allahabad, Allahabad
2. Annamalai University, Tamil Nadu
3. Banaras Hindu University, Varanasi
4. University of Burdwan, Burdwan
5. University of Calicut, Kerala
6. Devi Ahilya Vishwavidyalaya, Indore
7. Goa University, Goa
8. Gulbarga University, Gulbarga
9. Guru Jambheshwar University of Science & Technology, Hisar
10. Guru Nanak Dev University, Amritsar
11. Himachal Pradesh University, Shimla
12. HNB Garhwal University, Garhwal
13. University of Hyderabad, Hyderabad
14. University of Jammu, Jammu
15. Jawaharlal Nehru University, New Delhi
16. Kumaun University, Nainital
17. University of Lucknow, Lucknow
18. Madurai Kamaraj University, Madurai
19. M.S. University of Baroda, Vadodara
20. University of Mysore, Mysore
21. University of North Bengal, Siliguri
22. Pondicherry University, Pondicherry
23. University of Pune, Pune
24. R.T.M. Nagpur University, Nagpur
25. Sardar Patel University, Gujarat
26. Tezpur University, Tezpur (Assam)
27. T.M. Bhagalpur University, Bhagalpur
28. Utkal University, Bhubaneswar
29. Veer Bahadur Singh Purvanchal University, Jaunpur
30. Visva-Bharati University, Santiniketan

The Entrance Examination will be held on May 20, 2010 at Centers all over the country (detail of these examination centers is shown under Section XIII of this Prospectus).

Major thrust areas in teaching and research of participating Universities are given below:

1. UNIVERSITY OF ALLAHABAD, ALLAHABAD (15 seats) *

Students admitted to the programme are eligible for the award of M.Sc. degree in the Biotechnology on successful completion of the course.

The courses offered at Centre of Biotechnology are as follows: Biomathematics & Biostatistics (Paper I), Cell Biology, Virology & Microbiology (Paper II) Biophysics & Biochemistry (Paper III) and Physics (Paper IV) in 1st Semester. Animal Cell Culture (Paper I), Enzymology and Enzyme Technology (Paper II) Molecular Biology & Molecular Genetics (Paper III) and Environmental Biotechnology (Paper IV) in Second Semester. Immunology & Immunotechnology (Paper I) Genetic Engineering & Applications (Paper II), Computational Biology (Paper III) and Plant Biotechnology & Intellectual property rights in Third Semester. In 4th Semester, Human Genomics & Molecular Biology of Eukaryotic Systems (Core Paper I) and Bioprocess Technology (Core Paper-II) along with Elective Papers (any two) : Molecular Medicine, Applied Biotechnology, Marine Biotechnology.

Summer Training of 6-8 weeks is optional after 2nd Semester. The students will undertake research projects after second semester under the supervision of the faculty at the Centre.

The curriculum is regularly modified and updated with recent developments. The Centre has visits from eminent National and International scientists/teachers to deliver specialist lectures. The students are encouraged in various extra curricular activities like annual magazine seminars in the science faculty and science day celebration.

The Centre has well established research laboratories and is pursuing research programmes in the following areas:

Plant Tissue Culture and Plant Biotechnology, Cyanobacterial Molecular Biology, Bioremediation, Nano Biotechnology, Cyanobacterial Toxicology, Bio Leaching & Biohydrogen production, Protein folding misfolding, aggregation and amyloid formation, Cell Biology. Virus entry & Cell-cell fusion mechanism.

The Centre has active interaction for both teaching and research with various departments in the University of Allahabad and International Institutes/University.

Fees to be paid at time of Admission: Rs.9000/-(Approx.) (Except Hostel charges)

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Coordinator
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University of Allahabad,
Allahabad – 211002 (UP)
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coordinator.cbt@gmail.com

2. ANNAMALAI UNIVERSITY, TAMIL NADU (10 seats) *

Students admitted to the programme are eligible for the award of M.Sc. degree in Marine Biotechnology on successful completion of the course run by the Centre of Advanced Study (CAS) in Marine Biology of this University•

The CAS in Marine Biology is a reputed Marine Institute in India which is actively engaged in teaching, research and extension activities with an ideal location and easy access to different biotopes such as, estuary, mangrove, backwaters and coastal waters. It has made rapid strides in various facets of Marine Science. This Centre, the brain child of the Eminent Scientist (Late) Professor RV Seshaiya was started as the field laboratory for the Department of Zoology, Annamalai University in 1957, and was recognized for its outstanding research contribution by the University Grants Commission as the Center of Advanced Study in Marine Biology in 1963 and the Commission continues to extend generous assistance till date through COSIST and SAP. The current academic year is Golden Jubilee year for this Centre.

The Ministry of Environment and Forest (MoEn) sponsored ENVIS Programme besides Coastal Biodiversity (East coast of India) is one of our important activities at our Centre. This programme got Best ENVIS Centre award among all the Centres in India in 2006. In addition, the DOD sponsored programme on COMAPS and OASTC is also being operated in this Centre. Our Centre has been identified as Centre of Excellence in Marine Biology by Ministry of Earth Sciences (MoE), New Delhi. The DST – FIST recognition has also been obtained in the years 2000 and 2006 and also extended additional support for the year 2007.

This Centre has all the essential infrastructure facilities, such as, library, browsing centre, excellent collection of marine reference museum, (large collection of marine organisms), marine aquarium, experimental aquaculture ponds, instrumentation centre, sea water circulation plant and field vehicles including seaworthy boat.

Academic programmes :

The courses offered under Marine Biotechnology Programme are under Choice Based Credit System (CBCS) covered in 4 semesters, which include:

Marine Biodiversity & Bio-resources, Marine Microbiology, Biochemistry & Cell Biology, Analytics Techniques & Bioinformatics, Molecular Biology, Immunology, Endocrinology of Marine Animals & Reproduction, Aquaculture Technology, Recombinant DNA Technology, Bioprocess Technology, Environmental Marine, Biotechnology, Bio-safety and Bioethics, Marine Pharmacology, Bio-products & Intellectual property Rights. In addition to above core papers four optional subjects have to be undertaken alongwith a Research dissertation work. Our Centre has 64 faculties specialized in various walks of Marine Biology, Biotechnology, Microbiology, Oceanography, Pollution Toxicology, Aquaculture, Chemistry, Physics, Mathematics, Engineering, Bioinformatics, & Computer Science. Besides, this course is supported by associated faculties from Faculty of Science- Dept. of Biochemistry, Earth Science, Statistics, Physics; Faculty of Engineering & Technology- Dept. of Pharmacy, Chemical Engineering and Faculty of Medicine- Dept. of Microbiology.

Independent research topics are undertaken by students as a part of their curriculum on the following thrust areas: Shrimp Immunology, Characterization of novel plasmid from marine microbes, marine pharmacology, regulatory mechanism of endocrine system, functional physiology of halophilic microbes and molecular taxonomy. Periodical special lectures are arranged through eminent scientists in various fields of biotechnology.

Fees to be paid at time of Admission: Rs.30,000/- (Approx.) (excluding Hostel)

Contact Address: Dr. T Balasubramanian,
 Professor & Director
 Centre of Advanced Study in Marine Biology,
 Annamalai University,
 Parangipettai-608502
 Tamil Nadu
 Phone No. : 04144-253089
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3. BANARAS HINDU UNIVERSITY, VARANASI (16 seats) *

M.Sc. (Biotechnology) programme at Banaras Hindu University runs on a semester system consisting of four semesters. Students admitted to the programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course.

Besides the 7 core faculty members of the School the Faculty members from the Institute of Medical Sciences and Institute of Technology also share their expertise in teaching this multidisciplinary course. The School offers courses in Microbiology, Cell Biology, Biochemistry & Biophysics, Genetics and Molecular Biology, Biology of the Immune System, Enzymology and Enzyme Technology, Genetic Engineering, Plant Biotechnology, Animal Cell Culture, Environmental Biotechnology, Bioprocess Engineering and Technology, Bioinformatics & Biostatistics, Genomics & Proteomics and the evaluation is based on credit system. In addition to the above, students are allowed to choose any two minor electives of their interest offered by other departments of the Faculty of Science. A research project forms an integral part of the M.Sc. curriculum. The student undertakes a project work in one of the research areas of the School and present seminars related to their project topics in the third and fourth semesters.

The School is currently pursuing research programmes in the following areas:

- Plant Tissue Culture and Plant Biotechnology
- Cellular and Molecular Immunology and Tumor Immunology
- Molecular Microbiology with emphasis on Plant growth promotion
- Functional genomics in bacteria
- Environmental Biotechnology
- Enzymology and Enzyme Technology

The School has received financial support under UGC-SAP (DRS-Phase-II) and DST-FIST Programme and is part of the DBT supported interdisciplinary School of Life Sciences.

Fees to be paid at time of Admission: Rs. 5767/- (Approx.)

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 Coordinator,
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 Faculty of Science,
 Banaras Hindu University,
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4. UNIVERSITY OF BURDWAN, GOLAPBAG, BURDWAN (10 seats) *

The University of Burdwan was started in 1960 with its sprawling Campus in the estate of the erstwhile Maharaja of Burdwan. The M.Sc. course in Biotechnology was initiated in 2003 with the financial support of an NRI who donated two endowment chairs in the memory of his parents. The Dept. of Biotechnology, Govt. of India recognized and supported the program from 2006. The first five batches of students passing the 2-year degree course all secured first class and many have been absorbed in different research institutes of national importance. From 2007, semester system was started.

Adequate hostel facilities are available for male and female students in the campus of Burdwan University. The syllabus is similar to the DBT approved M.Sc. (Biotech General) syllabus. There is semester examination at the end of each of the four semesters. Class tests, seminars and project / review work are mandatory for all the students.

Research Programme: Plant Tissue culture, Bioremediation and Nutraceuticals have been initiated with five Ph.D Students and the faculty members.

Fees to be paid at time of Admission: Rs. 20,400/- (Approx.)

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5. UNIVERSITY OF CALICUT, KERALA (15 seats) *

Students admitted to the programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course.

The Department had implemented the DBT model curriculum for M.Sc. Biotechnology from academic session 2003-04. The curriculum contains the theoretical and practical courses in Cell Biology, Biomolecules, Microbial Physiology & Genetics, Molecular Biology, Cellular Biochemistry and basic Enzymology, Biology of Immune system, Bioinformatics and Biostatistics in the first and second semesters. During the third and fourth semesters, students are trained in specialized areas of Genetic Engineering, Animal Biotechnology, Plant Biotechnology, and Bioprocess Engineering and Technology. Elective subjects such as Cell and Molecular Biology, Immunotechnology, Environmental Biotechnology, Recombinant DNA Technology, and Plant Genetic Engineering are also offered. In the third and fourth semesters, the students shall undertake an independent research project under the guidance of faculty members.

The Department has a strong base in Plant Biotechnology, Immunotechnology, Cell and Molecular Biology, and Recombinant DNA Technology. The Department has close interaction with the Indian Institute of Spices Research, Kozhikode and the Central Plantation Crops Research Institute, Kasargode.

Fees to be paid at time of Admission: Rs.8965/- (Approx.)

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Coordinator & Head
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manishramakrishnan@rediffmail.com

6. DEVI AHILYA VISHWAVIDYALAYA, INDORE (16 seats) *

Students joining the programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course.

The School of Biotechnology offers teaching of Biomolecules, Cell Biology, Molecular Biology, Macromolecules & Analytical Techniques Engineering Principles, and Computer Applications & Biostatistics in the first semester, Biology of the Immune System, Microbial Physiology & Genetics, Enzyme Technology and Environmental Biotechnology in the second semester, Genetic Engineering, and Animal Cell Culture in third semester & Plant Biotechnology & Bioprocess Technology in fourth Semester. To hone the research skills of students, in third semester along with the course work the students are required to do an independent one-year research project on some suitable problem related to biotechnology under the supervision of the faculty. The project work is evaluated on the basis of the presentation and dissertation report. The assessment of the dissertation report is done by one external examiner and one internal member. To give technical exposure to the students, the School also encourages the students to undergo summer training in other institutes / industries for a period of six weeks after completion of second semester. The research areas of the school are Enzyme Technology, Molecular Biology, Microbial Technology, Plant Biotechnology, Bioinformatics and Environmental Biotechnology.

Fees to be paid at time of Admission: Rs. 17175/- (Approx.)(Without Hostel for one semester) , Rs.28425/- (Approx.)(with hostel room rent for one year, it does not include meals).

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7. GOA UNIVERSITY, GOA (20 seats) *

Students admitted to the programme are eligible for the award of M.Sc. degree in Marine Biotechnology on successful completion of the course.

In addition to the M.Sc. programme, the Department of Biotechnology also runs a Ph.D. Programme in Biotechnology. The Department is being funded by the DBT from the time of its inception in 1988 and since 2008 has the added distinction of being DST-FIST sponsored.

The courses offered for the M.Sc. programme are covered in 4 semesters and approx. 85% of the syllabus fits in with the DBT model curriculum for M.Sc. General Biotechnology. In the first two semesters emphasis is given on teaching physico-chemical aspects of Biology and include Principles of Molecular Genetics, Introductory Immunology, Principles of Microbiology, Concepts in Biochemistry, Marine Ecosystems & Principles of Oceanography; Biophysics & Bioinstrumentation; Cell & Developmental Biology, Bioinformatics & Biostatistics. In the later two semesters, specialized courses on Recombinant DNA Technology, Bioprocess Engineering & Industrial Biotechnology, Tissue Culture Technology, Marine Biotechnology and its Potential, Applications of Genetic Engineering & IPR, Enzymology and Molecular Immunology are offered.

The well equipped laboratories of the Department enable the students to take up independent research topics/projects during the third and fourth semesters, as an integral part of the curriculum.

The thrust areas of research in the Department are: Drugs and bioactive compounds from the sea; extremophilic (thermophilic/hypersaline/deep-sea/anoxic) microorganisms; biodegradation of oil using micro-organisms; risk assessment of genetically engineered organisms. Isolation and characterization of enzymes of biotechnological importance from marine organisms; RAPD studies in seaweeds; biological productivity characteristics in the northern Indian Ocean; biodiversity and enzymes.

Summer training (4-6 weeks) is mandatory at the end of the second semester and the students are placed in R&D laboratories of nationally recognized Institutes and Industries.

Almost 90% of our postgraduate students qualify for the CSIR/UGC fellowships and some of them secure a very high ranking at the GATE examination.

The placement profile of each outgoing batch has also been excellent, with the students successfully gaining positions in nationally as well as internationally renowned institutions.

The University has close interaction with the National Institute of Oceanography, Goa, for both teaching as well as research.

Fees to be paid at time of Admission: Approx. Rs.22000/- (inclusive of hostel fees and refundable caution deposits) to be paid in cash.

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E-mail : saga@unigoa.ac.in
sghadi@yahoo.com
Website : <http://www.unigoa.ac.in>

8. GULBARGA UNIVERSITY, GULBARGA (07 seats) *

Students admitted to the programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course. They can also avail facility of additional diploma in Nanoscience offered in the university.

The department offers M.Sc. semester courses in Cell Biology, Biochemistry, Biochemical, and Biophysical Techniques, Metabolism, Molecular Biology and Genetics Engineering, Bioinformatics and Biostatistics Immunology, Plant

Biotechnology, IPR and Biosafety, Animal Biotechnology, Protomicse Genomia, Immunotechnology, Microbial Technology, Environmental Biotechnology, Bioprocess Engineering. The new revised syllabus proposed by DBT is implemented from the year 2009-10 with updated inputs.

Students are also assigned with the project work, review article preparation and seminars. A study tour to undertake hands on experience in sophisticated industry/institute is encouraged. The project work on one of the advanced/emerging area is compulsory.

The centre has all the essential facilities, such as, Instrumentation laboratory, Cell and tissue culture laboratory, Virtual learning resource centre & digital library and Video conferencing.

The department has received various research projects funded by CSIR, DBT, DST, AICTE, MOWR. The department is collaborated for research activities with national institutes/organization such as SBI, Coimbatore; VSI, Pune; NIMHANS, Bangalore; Biocon, Bangalore; Novozymes, Bangalore;Sreeven Pharma, Bidar.

The M.Sc students of the department have qualified national exams such as CSIR-JRF, NET, GATE, NII, SLET etc.

The major research areas of the department are

- Plant tissue culture and Plant molecular biology
- Abiotic and biotic stress response in plants
- Animals Biotechnology & Pharmaceutical Biotechnology
- Medical Biotechnology and Phage Therapy
- Industrial Biotechnology & Fermentation technology
- Pharmacokinetic studies of plant based bioactive molecules.

Fees to be paid at time of Admission: Rs. 10,000/- (Approx.)(Including Hostel)

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 Gulbarga – 585106
 Phone No. : 08472-263290
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 E-mail : grnaik2009@gmail.com
 website : <http://www.gulbargauniversity.kar.nic.in>

9. GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR (16 seats) *

Guru Jambheshwar University of Science & Technology (GJUS&T) is an **A grade NAAC Accredited** University. Students admitted to the programme in the Department of Bio & Nano Technology of GJUS&T, are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course.

This is a DBT-sponsored programme offering courses on Introductory Biotechnology, Structure, Function & Metabolism of Biomolecules, Cell Biology, General & Applied Microbiology and Introduction to Computers & Programming, Biochemical & Biophysical Techniques, Gene Structure Function & Regulation, Immunology & Animal Cell Culture, Plant Cell, Tissue and Organ Culture, Fermentation Technology, Genetic Engineering, Enzymology & Enzyme Technology, Molecular Genetics, Application of Biotechnology in food, Introduction to Bioinformatics, Agricultural Biotechnology & IPR, Application of Environmental Biotechnology, Medical Biotechnology. The students have to undergo a three to four weeks of in-Plant/ Summer Training in various Institutes/Industries during summer vacations of the first year. A 14 to 16 weeks of Investigation Problem during the 4th semester forms an integral part of the program. The courses offered are innovative in several respects with major thrust being different research areas pertinent to Plant Biotechnology & Food Biotechnology. Credit based system of Examination based on international pattern has been introduced from Academic Session 2006-07. The Department has a well established Bioinformatics Facility (BIF) for the promotion of biology teaching through Bioinformatics (BTBI) under BTIS net program of DBT assistance & partly funded by DST-FIST program.

Fees to be paid at time of Admission: Rs.15000/- (Approx.)

Contact Address: Prof. J S Rana,
 Chairperson
 Dept. of Bio & Nano Technology,
 Guru Jambheshwar University of Science & Technology,
 Hissar – 125001 (Haryana)
 Phone No. : 01662-263165
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 : jsrana@gjust.org
 Website : www.gju.ernet.in.

10. GURU NANAK DEV UNIVERSITY, AMRITSAR (10 seats) *

Students admitted to the programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course.

Students are imparted theoretical and practical training in Biochemistry, Microbiology, Genetics, Immunology, Computer Applications and Biostatistics, Biochemical and Biophysical Techniques in the first semester. During the second, third & fourth semesters, students are trained in specialized areas of Genetic Engineering, Immunobiotechnology, Plant and Animal Tissue Culture, Biochemical Engineering, Fermentation Technology, Enzymology Genomics and Functional Genomics and Computer Programming and Bioinformatics. In the fourth semester, students are also required to work on a small independent research project to sharpen their scientific skills and knowledge under the guidance of a faculty member and also graded seminars are conducted. The project work is evaluated by an assessment committee constituted for this purpose. Following a satisfactory report, the student is recommended for the award of M.Sc. degree in Biotechnology. In addition to the course work, the students also undergo training programme in Biotechnology based Industries/Institutes of repute for two months during summer vacations (after 2nd semester).

The Department is well equipped with modern instrumentation and infrastructure to allow and encourage the students to explore the field/problem of their choice in disciplines of Plant Biotechnology, Animal Biotechnology and Microbial/Fermentation Technology.

Fees to be paid at time of Admission: Rs.29670 + 9550 (Hostal Charges)(Approx.)

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0183-2258802-09 Extn. 3177
Fax No. : 0183-2258272 & 2258820
E-mail : biotechgndu@yahoo.com
Website : www.gndu.ac.in

11. HIMACHAL PRADESH UNIVERSITY, SHIMLA (15 seats) *

Students admitted to the programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course.

The students shall be introduced to the theoretical and practical aspects of the major areas of Biotechnology. The courses offered in the first semester are: Remedial Course 1 Introductory Mathematics (for Biology students) or 2 Introductory Biology (for Non-Biology students), Biochemistry Microbiology, Genetics & Molecular Biology and Instrumental Methods of Analysis. The students will study Recombinant DNA Technology, Immunology and Immunotechnology, Plant Biotechnology and Animal Biotechnology in the second semester. They shall undertake Biochemical Engineering, Fermentation Technology, Enzyme Technology and Computer and Bioinformatics in third semester. Students are required to carry out a Minor Project. The courses in the fourth semester include Environmental Biotechnology, Biobusiness Management and a special paper. For specialization the students will opt any one of the areas: Biocatalysts and Biotransformation, Food Technology, Metabolic Engineering and Nano Biotechnology. They are also required to undertake a major research project in the area of biotechnology.

Fees to be paid at time of Admission: Rs.1193/-(Approx.)

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Coordinator
Department of Biotechnology,
Himachal Pradesh University,
Summer Hill, Shimla – 171005 (HP)
Phone No. : 0177-2831948, 2832154
Fax No. : 0177-2832154, 28319480
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12. HNB GARHWAL UNIVERSITY, GARHWAL (13 seats) *

HNBGU campuses, situated in the heart of Himalaya, offer highly conducive environment for higher education and research. It attracts students from 26 Universities/14 States (average last 5 yr.). The students have been rated highly motivated, alert, articulate and aware (Resonance, July 2003, IISc Bangalore). The Department identified for excellence in research & teaching by UGC through SAP & COSIST, DST-FIST and DBT-HRD, has emerged as a hub of scientific activity and quality Human Resource Development in Biosciences. Most striking features are its warm ambience, strong student-teacher rapport,

student participatory approach and inquiry based interactive learning system (aided with computers) conducive to critical thinking and personality building. The department has well equipped laboratories, classrooms with modern teaching audiovisual aids and computer labs with broadband internet facility.

The Department offers two-year M.Sc. Biotechnology degree course. In the first two semester, fundamentals of Biochemistry, Molecular Biology, Genetics, Microbiology, Immunology, Genetic Engineering Enzymology etc. are taught. To widen the outlook of the students towards the subject full papers on Legal Biotechnology, Computer programming and Market Management are included in the syllabi for which trained professionals are invited as guest lecturers. The third semester course work includes Cell and Tissue Culture, Biochemical & Molecular Endocrinology, Bioinformatics, Environmental Biotechnology and Bioprocess Engineering. In the fourth semester, students are required to undertake dissertation/thesis work along with two elective courses on advance area of biotechnology like Food and Beverage Technology, Pharmaceutical Biotechnology and Drug designing, Immunotechnology, Fish Biotechnology and Biomedical Technology.

HNBGU following several student interactive brainstormings with renowned scientists of the country has provided a 3-tiered roadmap strengthening knowledge of basics, up-linking with the industry & rendering it society relevant-through integrative, flexible curricula. The high profile basic and vocational PG courses, adjudged 'of very high standard and utility' by UGC-NAC, 2003, groom students for academic excellence. The Department has an excellent track record of its students qualifying for national (NET-CSIR/UGC, GATE, ICMR,NII, CCMB, DRDO, IIT, JNCAR, BARC etc.) and international fellowships (USA, UK, Korea, Finland, Germany etc.). Students of this Department have been successful in securing placement in top biotechnology industries viz., Sanofu Aventis, Biocon, Panacea Biotech, Pfizer, Ranbaxy, Sun Pharma, Genetix etc. Major thrust area of research are Animal Behaviour, Endocrinology, Molecular physiology, Immunodiagnosics, Genetic diversity, Environmental community and population, phylogeography, Conservation Biology, Bioinformatics and Microbial biotechnology. Faculty serve on prestigious national & international bodies.

Fees to be paid at time of Admission: Rs.3500/- (Approx.)

Contact Address: Prof. J P Bhatt,
Professor & Head
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HNB Garhwal Central University,
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13. UNIVERSITY OF HYDERABAD, HYDERABAD (10 seats)*

University of Hyderabad, a premier institute, recognized by the Government of India, stood first in the 2009 scopus ranking amongst the Universities in India. Department of Biotechnology, School of Life sciences at University of Hyderabad offers the "M.Sc. Biotechnology Programme" and awards M.Sc., degree in Biotechnology to student after their successful completion of the course. University started implementing the revised course curriculum suggested by the DBT from the academic year 2009-2010. The department offers elective courses on Protein Engineering and Protein Folding, Molecular Therapeutics, Stem cell biology, Evolutionary Genetics, Vaccines, Computational Biology, Industrial and food biotechnology. University strictly follows academic calendar and evaluation is based on credit earned by the students.

The department has eight permanent faculty members and seven more faculty members to be recruited shortly. In addition 23 joint faculty members from various sister departments including Departments of Biochemistry, Plant Sciences, Animal Sciences and School of Chemistry and Computer and Information Sciences participate in the Department's teaching schedule. The department has a strong collaboration with the Centre for DNA Finger Printing and Diagnostics, Hyderabad and the scientists provide their expertise to the department. The participation of a highly experienced faculty covering a wide spectrum of relevant disciplines of Biotechnology constitute a strong source of strength for accomplishing the teaching programs in M.Sc Biotechnology as well as in M.Tech in Bioinformatics.

The research area of the Department is focused on "Molecular Therapeutics for Infectious and Neurodegenerative Diseases". The present research activities of the faculty including PhD programme in Biotechnology are primarily centered on understanding molecular mechanism of folding and function of proteins, the ribosome structure and function, functional characterization of topoisomerases, molecular and cellular changes in brain in neurodegenerative diseases, molecular epidemiology and pathogenomics, vaccines, computational and functional genomics and chaperosome. Supported by different national and international funding agencies these studies are aimed at the development of molecular therapeutics and nano particle based drug delivery systems for HIV, cancer and neurodegenerative diseases. These activities provide an excellent academic program that facilitate innovative teaching and provide research orientation to the students of M.Sc. Biotechnology. Teaching laboratories of M.Sc. are well equipped and the students have access to various research laboratories and facilities like proteomics, genomics and bioinformatics infrastructure facility.

Fees to be paid at time of Admission: Rs.Rs.5800/-(Approx.)

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14. UNIVERSITY OF JAMMU, JAMMU (05 seats) *

University of Jammu is the first University of the country to get ISO: 9001-2000 certification.

Students admitted to the programme are, on successful completion of the course, awarded M.Sc. degree in Biotechnology. So far, nine batches have graduated from this University and are well placed.

Effective session 2008-09, a revised syllabus, based on the syllabi recommended by the University Grants Commission and the Department of Biotechnology, Govt. of India, has been implemented. The semester wise distribution of courses is: 1st Semester:- Cell Biology, Biomolecules, General and Applied Microbiology, Biochemistry and Metabolism and Laboratory Course I. 2nd Semester:- Molecular Biology, Enzymology, Genetics, Immunology and Laboratory Course II. 3rd Semester:- Genetics Engineering, Plant Biotechnology, Bioprocess Engineering, Animal Biotechnology, Laboratory Course III. 4th Semester:- Environmental Biotechnology, Bioinformatics and Research Project. During the summer intervening the 2nd and 3rd Semester, the students undergo summer training in an Institution/Industry outside the Department/Jammu City. At the end of the 4th Semester the student submits a dissertation based on his/her research project which is evaluated by external examiners as is the subsequent oral presentation.

As a result of guidance provided by the School, in the form of various audited and credited courses more than 80% of the graduated students have qualified National tests, like NET, BET and GATE so far. The University has Centre for Quality Assurance that helps in the proper placement of the students. The placement record of the alumni of this School is excellent as the students have been placed in Institutes of International repute such as IISc, Bangalore, IIT, New Delhi; NCCS Pune; CCMB Hyderabad; JNCASR, Bangalore; NII, New Delhi; CDRI, Lucknow; NBRI Lucknow; NBRC, Gurgaon etc. The School has been able to attract extramural funding in the form of major research projects. DBT, Government of India has sanctioned grants for establishing Bioinformatics facility in the School. The Bioinformatics Centre conduct short term courses and workshops in Bioinformatics for the benefit of students.

The thrust areas of the School are: (1) Plant Biotechnology (2) Genomics (3) Enzyme Biotechnology (4) Industrial Microbiology (5) Fungal Biotechnology..

Fees to be paid at time of Admission: Rs.13305/- per year (Approx.)

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15. JAWAHARLAL NEHRU UNIVERSITY, NEW DELHI (31 seats) *

The School of Biotechnology was one of the first six centres established under the aegis of Department of Biotechnology (DBT), Govt. of India for carrying out Postgraduate teaching and research in areas related to Biotechnology. Initially established as a Special Centre for Biotechnology in 1985, it was upgraded to the level of a School in the year 2006.

Over the years the Biotechnology programme at JNU has established itself as a leading academic programme both from the teaching and research point of view. The faculty of the school is internationally recognized for basic and applied aspects of biotechnology research.

The School for Biotechnology emphasizes teaching of Physico-Chemical aspects of Biology in the early semesters including Biochemistry, Microbiology, Biophysical Chemistry, Cell Biology, Biomolecules, Immunology, Molecular Biology & Molecular Genetics & Bioprocess Technology. In the later semesters, specialized courses on Downstream processing,

Virology, Computational Biology, Molecular Biology of Eukaryotic systems, Genetic Engineering and its Applications, Animal Cell Technology are offered. Students also deliver seminars as part of the course curriculum.

M.Sc. students also participate in major research projects starting in the third semester in one of the following areas:

- Molecular Biology and Genetic Engineering
- Molecular Biology of infectious diseases
- Immunology
- Protein Engineering, Protein Structure, stability and folding
- Biochemical Engineering, Metabolic Engineering and Bioprocess Technology
- Transcription and Human Biology
- Structural Biology and Bioinformatics
- Cell Signalling
- Cancer Biology
- Molecular basis of human viral diseases

For details about the various programmes, course outline, faculty profile and facilities visit our Website: <http://www.jnu.ac.in/SBT>

Fees to be paid at time of Admission: Rs.5,000/- for General including OBC & Rs.2500/- for SC,ST,PH (Approx.)

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16. KUMAUN UNIVERSITY, NAINITAL (10 seats) *

Students admitted to the 2-year (4 semesters) programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course. This programme is supported by the Department of Biotechnology, Govt. of India and all students admitted receive a stipend of Rs. 1200/- p.m.

The Department of Biotechnology of this University has been established with the objective to train students in various areas of Biotechnology. Students of this University are offered conceptual courses like Biochemistry, Microbiology, Cell Biology, Biostatistics and Computers to develop the basic understanding of the subject during their initial studies and core courses like Molecular Biology, Molecular Genetics, Biophysical Techniques, Immunology during later semesters. Besides that they are taught advanced courses like Genetic Engineering, Bioprocess Engineering, Plant Biotechnology and Environmental Biotechnology and are offered elective courses like Aquatic Biotechnology, Enzyme Biotechnology and Medical & Animal Biotechnology to select from in the IIIrd Semester. The course work has been develop the expertise in the area of specialization and to give a more practical and directional approach to the understanding of the subject, the students are required to undertake project/thesis work in their final semester, which starts from IIIrd semester.

The M.Sc. students of the department have hundred percent success rate in the competitive examination held for the award of GATE/DBT/ICMR/JNU/SPM/UGC/CSIR-NET/JRF and are placed at institution of national and international repute.

The department has been shifted to a new building at the Bhimtal campus of the university. 20 kilometers downhill of Nainital. The new infrastructure has Plant Biotechnology, Biochemistry, Molecular Biology and Microbiology laboratories etc. other than teaching laboratories. The courses are taught by the faculty of the department as well as by guest lectures of various experts of specialized areas. The faculty members are actively working on various Biotechnology related projects funded by DBT, CSIR, UCOST etc. The department has active interaction for both teaching and research with various institutes and universities of repute. The Department is also having a well equipped Bioinformatics facility(BIF), sponsored by DBT, Govt. of India. Specialized lectures of eminent scientists in various fields of biotechnology are also organized regularly.

Fees to be paid at time of Admission: Rs. 12,871/- (Approx.) in the first semester and thereafter Rs. 10,321/- per semester, Govt. Hostels (Boys & Girls) are available at Rs. 10,000/- per year excluding food.

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17. UNIVERSITY OF LUCKNOW, LUCKNOW (10 seats) *

Students admitted to the programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course.

M.Sc. Biotechnology program is supported by Department of Biotechnology (DBT), Govt. of India and is run in the Department of Biochemistry, Lucknow University. This is a 4-semester course with 8 weeks summer training. The course content, in brief, include: Biomolecules and Biopolymers; Biophysical Chemistry and Techniques; Biostatistics and Computer Applications; Enzymology; laboratory Course I; Molecular Cell Biology; Microbiology and Metabolic Processes; Molecular Biology I; Immunology; Student Seminar; Laboratory Course II; Molecular Biology II; Principles of Genetic Engineering; Microbial Technology and Bioprocess Engineering; Enzyme and Food Technology; Students Seminar; Laboratory Course III; Plant Biotechnology and Tissue Culture; Animal Biotechnology and Cell Culture; Project work; Two months summer training (Entrepreneurship). The method of teaching include the combination of lectures and practical / demonstration by the faculty and guest speakers, seminars, audio-visual presentation, etc.

The Department of Biochemistry is well recognized all over the country for its standard of teaching and research. The department runs M.Sc., M.Phil, Ph.D. and D.Sc. degree programs. The M.Sc. Students of this department have always excelled in the competitive examinations held for the award of Research fellowships at national level-UGC-CSIR NET, GATE, etc.

The Department is collaborating in research activities with the other departments of the University as well as with national organizations, such as Central Drug Research Institute, Industrial Toxicology Research Centre, National Botanical Research Institute, Central Institute of Medicinal and Aromatic Plants, King George Medical University, Lucknow.

The Department has earned recognition in the form of financial support from Rockefeller Foundation, UNESCO, PL480, UGC under special Assistance and COSIST Programs and DST-FIST. Department also has Bioinformatics Infrastructure Facility (BIF) of DBT.

The major research areas of the department include: (1) Transgenics (2) Enzyme Engineering (3) Membrane Technology (4) Clinical Biochemistry (5) Animal Biotechnology

Fees to be paid at time of Admission: Rs.10,000/- (Approx.) Hostel charges are extra

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18. MADURAI KAMARAJ UNIVERSITY, MADURAI (25 seats) *

Students admitted to the programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course.

The M.Sc., teaching programme is a two-year (4 semesters) course and follows Choice Based Credit System (CBCS) of the University. The CBCS offers both Core and Elective courses in each School. The students have the option to take also the elective courses offered by other Schools in the University. Projects are the integral part of the CBCS and each student works on a research project for one full semester.

The students have the option to work for a summer project in Biotech companies, National Laboratories and other Premier institutions in India for about 6 weeks at the end of first year.

The School of Biotechnology, which runs the M.Sc. Biotechnology programme, has excellent facilities for research in the areas of modern Biotechnology. Moreover, the School has regular ongoing research and developmental projects in thrust areas.

The School has the following National Facilities:

- National facility for clinical proteomics.
- Centre for Plant Molecular Biology
- Centre of Excellence in Bioinformatics
- High Resolution Graphics
- VPN NODE of DBT
- FIST (DST)- DNA sequencing facility and Central Computer Laboratory
- SAP-UGC – Real Time PCR

Major research programmes of the School of Biotechnology are:

- Production of anticancer antibiotics from *Streptomyces*
- Production of Industrial Enzymes from *Streptomyces*, *Bacillus*, *E.coli* and Fungi
- Plant Tissue Culture
- Genetic Engineering of Plants using *Agrobacterium tumefaciens*
- Transgenic plants for virus, fungal and stress resistance.
- Stress response in plants
- Regulation of gene expression in fungi
- Molecular Biology, Immunology and *Genome Analysis* of *Mycobacterium leprae* and *M. tuberculosis*
- Vaccines
- Animal Biotechnology
- Cell Biology
- Immunochemistry and biodegradation of toxic chemicals
- Protein crystallography and Structural biology
- Bioinformatics
- Comparative genomics of microorganisms
- Human serum proteomics and tear proteomics
- Industrial collaborative projects
- Nanobiotechnology

Fees to be paid at time of Admission: Rs.13535/- (Approx.) .

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19. M. S. UNIVERSITY OF BARODA, VADODARA (25 seats) *

Students joining the programme are eligible for the award of degree in M.Sc. Biotechnology on successful completion of the course.

The Maharaja Sayajirao University has strong base in Microbial Technology and the main features of the programme are Genetic Engineering, Molecular Biology, Industrial Microbiology and Immunology.

The basic training is given in Microbiology, Biochemistry, Genetic Engineering, Developmental Biology, Biochemical Engineering and some aspects of Biophysics, Biostatistics, Bioinformatics, Plant Tissue culture and Environmental Biotechnology. The major research programmes are in the following areas:

- Heterologous Gene Expression
- Genome Analysis
- Genetic Engineering for Disease Resistance
- Proteome Analysis
- Microbial Polysacchari
- Bioprocess Development
- DNA and diagnostics
- Enzyme Technology
- Bt-toxin receptor studies
- Macrophage – bacteria interactions
- Molecular evolution
- Microbial diversity
- Protein osmolyte interactions

Students work on a research project for the duration of their course as a part of the practical training. The aim is to provide them sufficient experience and proficiency in the methodology of biological research to enable them to carry out independent research. Projects are assigned, as far as possible, according to the individual interests of students, and are carried out in our own laboratories or of other departments or institutions/ industry. After submission of their dissertation, the students undergo a viva-voce, in which they have to defend their work.

Students are also required to give one seminar during their course and submit a project proposal and a term paper.

The Centre also has the following facilities/programmes:

- Bioinformatics Centre – DIC
- Genome Research Centre
- One year Course on Post M.Sc. Diploma in Genetic Engineering and Bioprocess Development.

Fees to be paid at time of Admission: Boys - 2330/- + Hostel Rs.3000/- (Approx.)
Girls - 1120/- + Hostel Rs.3000/- (Approx.)

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20. UNIVERSITY OF MYSORE, MYSORE (10 seats) *

Students admitted to the programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course.

M.Sc. Biotechnology is a four-semester (two-year) programme offered by the Department of Studies in Applied Botany and Biotechnology, and is recognized by DBT. Students are imparted theoretical and practical training in Principles of Biochemistry, Biochemical Techniques, Biophysics, Microbiology, Cell Biology, Molecular Genetics, Molecular Biology, Genetic Engineering, Immunology, Microbial, Food and Environmental Biotechnology, Biostatistics, Bioinformatics, Plant Biotechnology, Animal Biotechnology and Molecular Plant Pathology. In the third semester the students have to select one choice based elective paper offered by other departments in the campus. The students are required to give one seminar per semester and have to undertake a project work in the fourth semester.

The major thrust areas of the Department include Plant Biotechnology, Cell and Tissue Culture, Molecular Plant Pathology, Cancer Biology, Bioprospecting, and Microbial Technology. The department is having various sponsored research programmes like UGC – SAP – DRS, COSIST, DST-FIST, ICAR, DBT-HRD programmes and DANIDA programmes. In addition, the faculty members are having competitive grants from national and international funding agencies. The Danish International Assistance (DANIDA) has established a Seed Health Center for Asian region at the department. The University is reaccredited by NAAC with A+ grade. Ministry of Human Resource and Development, Government of India has recognized university of Mysore as one of Institutions of Excellence among 3 Institution in India for the year 2008-09. A special grant Rs. 100 crores has been announced for this purpose in the Union Budget for the year 2008-09.

Excellent infrastructure has been developed at the department including Electron Microscope, Multifunctional Image Analysis System (for autoradiography, fluorescence and chemiluminescence detection) and Internet facilities.

Fees paid at time of Admission/Registration: Rs. 20,000/- (Approximate) for General Category*
Rs. 18,000/- (Approximate) for SC/ST Category*
* Subject to change as per University Notifications.

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21. UNIVERSITY OF NORTH BENGAL, SILIGURI (07 seats) *

Students admitted to the programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course.

The programme has been introduced from the session 2001-2002 with support from the DBT, GoI. Growing within the years, the Department of Biotechnology, University of North Bengal, promotes and facilitates faculty and student research

in microbiology, biochemistry, molecular biology, cell biology, and molecular genetics to achieve goals of Biotechnology. The department provides technical support for research and a nucleus for interdisciplinary research and training initiatives, and prepares students to work in modern research facilities at University of North Bengal. The department of Biotechnology is committed to the values of: Pursuit of excellence, Academic and intellectual freedom, Creativity and innovation, Diversity, cooperation and communication, and Accountability. Within a short period the department has been capable to establish Biotechnology and Genomics-proteomics-metaboleomics-resistome research initiatives to provide students with outstanding research projects in supported programs. The department currently provides strong ties between researchers in different DBT sponsored departments of the country. It has strengthened ties with the National Research Institutes, R & D Centres and other public institutions and increased cooperation in consortium programs and interdisciplinary research projects.

The DBT prescribed syllabus for M.Sc. in Biotechnology is being followed. With the modern teaching aids including ICT, the students are groomed under the same roof by versatile and dedicated teachers and scientists with sound background in genetics, biophysics, molecular biology, immunotechnology, animal biotechnology, plant biotechnology, microbial biotechnology, bio-informatics and comparative genomics.

Fees to be paid at time of Admission: Rs.11254/- (Approx.)

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22. PONDICHERRY UNIVERSITY, PONDICHERRY (18 seats) *

Students admitted to the programme are eligible for the award of M.Sc degree in Biotechnology on successful completion of the course.

Choice based credit system is followed in Pondicherry University where the students are at liberty to choose the courses of their interest in consultation with the Faculty Advisor. Hard core and soft core courses offered by different departments are available and the students can construct their curriculum depending upon their ambition.

Courses offered during programme include Microbiology, Biochemistry, Cell and Molecular Biology, Molecular Genetics, Applied and Industrial Microbiology, Molecular Plant Pathology, Immunobiology, Plant Biotechnology, Marine Biotechnology, Animal Biotechnology, r-DNA Technology, Immunotechnology, Bioprocess Technology, Bioinformatics and Pharmacokinetics. Besides credit seminar(s), the students are expected to carry out dissertation in the last two semesters. In addition to the above, the students shall undergo a 6-weeks training programme during the summer vacation in any of the reputed National Laboratories/Universities/Industries in India.

The Department has eight faculty members and equipped with instruments necessary for advanced research in Biotechnology. Some facilities include: Equipment - Bioreactor, Blotting apparatus, Deep freezers, Ice-flaker, Electrophoresis, Gel Documentation system, High-speed Centrifuges, Real-Time PCR, ELISA reader, Gas Chromatography, HPLC, LCMS, Lypophilizer, UV-VIS spectrophotometer, Phase contrast microscope, Inverted microscope and Flow-cytometer, Facilities ; Plant Tissue culture facility, Animal Cell culture facility, Biosafety facility and Radioactive material usage facility.

The Department has received financial support from both National (DBT, DST, UGC, CSIR, AICTE and DAE) and International (Rockefeller Foundation and Danish Government funding agencies). The Department have also earned recognition for financial support through DST-FIST and UGC-SAP programmes.

Major research programme of the Department are as follows:

1. Metagenome for novel functional genes
2. Bioactive molecules from soil, marine microbes, plants and invertebrates
3. Crop improvement through genetic engineering and marker assisted breeding
4. Application of probiotics in aquaculture and food processing industries
5. Role of cell adhesion molecules in pathogenesis of Staphylococcus epidermis
6. Biological synthesis of nanoparticles

Fees to be paid at time of Admission:

Tuition Fees:	Rs. 3,679/-(approx)
Hostel Fees:	Rs. 4725/-(approx) for general category
	Rs. 3825/- (approx) for SC/ST and Girl Students

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23. UNIVERSITY OF PUNE, PUNE (20 seats) *

Students admitted to the programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course. There are 100 credits to be completed by a student.

The main thrust areas of the centre are quantitative aspects in Biology with core courses in Biological Chemistry (including Biochemical and Biophysical methods), Cell Biology, Computer Programming, Biomathematics and Statistics, Molecular Biology, Genetics, Immunology, Microbiology, Virology and Bioinformatics which are offered in the first two semesters. In the later two semesters, more specialized and advanced courses, namely Genetics Engineering, Tissue Culture (Animal & Plant), Stem Cell Technology, Genomics and Proteomics, Structural Biology, Chemical Synthesis and Screening, Plant Biotechnology, Biochemical Engineering are offered. The fourth semester courses also include a seminar course and research project.

The department has six faculty members and well established research laboratories. A number of Ph.D. and Post doctoral students work in various research programmes of the Department which are as follows:

1. Molecular biology of regulation of protein synthesis during cytoplasmic stresses.
2. Regulation of protein synthesis in *Leishmania donovani* and screening of plant based bioactive molecules with therapeutic properties.
3. Molecular diagnosis for hematological disorders.
4. Proteomics – parasites and microbes.
5. Understanding the mechanism of heavy metal bioremediation at molecular level and Nanobiotechnology involving microbes.
6. Secondary metabolite production in vitro in plants.

The department has active interaction with the neighbouring Departments and National Laboratories. Scientists from NCCS, NCL, NIV, NARI, ARI etc. are involved in our teaching program.

Fees to be paid at time of Admission: Rs.15372/- (Approx.)

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24. RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR (10 seats) *

Students admitted to the programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course.

The course is envisaged to cater to the needs of the Food industries, Pharmaceutical industries, Molecular biology and also environmentally friendly applications of the Biotechnology. The M.Sc Biotechnology course related to the "Fermentation Biotechnology, Environmental/ Industrial Biotechnology, Plant & Health Molecular Biology" is based on semester pattern. In first three semesters, there are two theory papers & one practical each. The course offers theoretical and practical training in Cell Biology, Genetics, Enzymology, Macromolecules and Biophysical techniques, Microbial physiology, Industrial Biotechnology & Biostatistics, Molecular Biology, Immunology & Bioinformatics, Animal and Plant Biotechnology Genetic Engineering. In the fourth semester, the students undertake project dissertation work/Field based Project on a related research topic of Biotechnology, which is compulsory, The work must be original and is expected to be critical analysis of a problem of contemporary significance. Further, the allotted written assignment and its presentation in seminar on Environmental Biotechnology & Legal based applications is accredited in IV semester.

Students are encouraged to visit some research institutes of national and international repute during the two-year course. Every student has to give at least one seminar every year and submit a written summary of the same. Every student

undergoes the summer/winter training programme in Biotechnology Industry/ R&D Institutions for atleast 2-4 weeks during the vacations or IV semester. Monthly fellowship (studentship) of Rs.1200/- per month is being awarded to each student enrolled under the DBT-RGBC support programme.

Rajiv Gandhi Biotechnology Centre has active interaction of both teaching and research with various departments in the University and a number of neighbouring research Institutes and is well equipped with modern instrumentations and infrastructure to allow and encourage the students to explore the horizons of knowledge in varied aspects of Biotechnology.

Fees to be paid at time of Admission: Annual Fee: First year (i.e. Sem-I & Sem-II) - Rs.21,014/- (Approx.)
Second year (i.e. Sem - III & Sem-IV) - Rs.21,905/- (Approx.)

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25. SARDAR PATEL UNIVERSITY, GUJARAT (10 seats) *

Students admitted to the programme are eligible for the award M.Sc. Degree in Industrial Biotechnology on successful completion of the course. The BR Doshi School of Biosciences has a strong research base in Fermentation Technology and Environmental Biotechnology and also runs five other post-graduate courses such as Biotechnology, Biochemistry, Botany, Zoology and Microbiology. The DBT-sponsored post-graduate programme in Industrial Biotechnology is spread over four semesters in two years. First three semesters cover four theory and two lab courses in each semester. The theory papers covered are: Molecular Biology, Bioinstrumentation, Chemical engineering & Thermodynamics of Biological Systems, Cell biology & Genetics, Transport Processes & Down Stream Processing, Genetic Engineering & Bioinformatics, Bioprocess & Biochemical Engineering, Environmental Biotechnology, Plant & Animal Biotechnology, Immunology, Microbial Technology and Enzymology.

The entire fourth semester is devoted for dissertation project. The students are required to give one seminar in each semester and have to undertake a project work within the department and face viva-voce to defend their work. The courses will be taught by faculty of the department as well as regular visiting faculty. Department has 15 faculty members actively working in the three major areas : 1) Plant Morphogenesis 2) Biodiversity Conservation and 3) Environmental Biotechnology. The department has received grants under major research programme like UGC-SAP-DRS, UGC-SAP-DSA, DSI-FIST, UGC-COSIST, and UGC-SAP-DSAIL. In addition the faculty members are actively working in various biotechnology related projects funded by UGC, CSIR, DST, DBT, ICAR etc.

Fees to be paid at time of Admission: Rs.5,000/- (Approx.) per semester

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26. TEZPUR UNIVERSITY, TEZPUR (ASSAM) (20 seats) *

The Department offers a two-year post-graduate programme leading to the award of M.Sc. degree in Molecular Biology & Biotechnology and a five year integrated course in Biosciences and Bioinformatics.

The courses for the first two semesters are designed with an objective to strengthen the basic concepts of Life Sciences with emphasis on helping the students to develop a holistic perspective of life sciences. These courses include Genetics and Cytogenetics, Microbiology, Cell Biology, Biophysical Chemistry, Techniques and Instrumentation, Enzymes and Enzyme Technology, Immunology, Molecular Biology, Cell and Tissue culture.

The third and fourth semesters offer courses giving in-depth treatment in the areas of Fermentation and Process Control, Genetic Engineering, Management and Legal Issues in Biotechnology. The Department offers three optional

courses, viz., Animal Biotechnology, Plant Biotechnology and Food Biotechnology for preferential selection of students. Two credit courses on Spoken English and Remedial Mathematics are offered during the first semester and an optional non-credit proficiency course chosen from other disciplines may be opted by the students. There is provision for other remedial courses on specific areas relevant to the programme whenever required. Students are given independent credit-based research projects as a partial requirement for the M.Sc. degree.

The Department has good laboratory facilities, Computers, Internet and Library facilities. The Department houses a Research Centre for Petroleum Biotechnology.

The Department has close interaction with some of the reputed Institutes and Universities of the country. The faculty member of the Department are actively engaged in research in the following major areas: (1) Environmental and Petroleum Biotechnology (2) Microbial Biotechnology (3) Snake Venom Biochemistry and Biotechnology (4) Medicinal Plants (5) Enzymology and Enzyme Technology (6) Evolutionary Genomics (7) Molecular Immunology and Immunogenetics.

Fees to be paid at time of Admission: Rs.10722/- (Approx)

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Head & Coordinator
Department of Molecular Biology & Biotechnology,
Napaam, Tezpur University,
Tezpur - 784028
Phone No. : 03712-267008-09 Ext.5401/05
Fax No. : 03712-267005/6
E-mail : akm@tezu.ernet.in

27. T.M. BHAGALPUR UNIVERSITY, BHAGALPUR (20 seats) *

Named after Tilka Manjhi – a great martyr of India's freedom movement, T.M. Bhagalpur University was established in 1960. Students admitted to the program are eligible for the award of M.Sc. Degree in Biotechnology on successful completion of the course.

M.Sc. Biotechnology program was started at T.M. Bhagalpur University in 2001 to offer high quality education, training & research in Biotechnology at the Master level. Though Post Graduate Department of Biotechnology (PGDBT) is in its beginning stage more over within short period it has gained appreciation from NAAC & UGC & DBT, New Delhi. It is two years course consisting of four semesters, i.e., Sem-I to Sem. IV each of six months. The PG DBT offers courses in Cell Biology & Biomolecules, Microbial Physiology & Genetics, Biophysical Chemistry, Computer Applications, Biostatistics & Mathematics, Molecular Biology & Genetic Engineering, Immunology, Macromolecules & Basic Enzymology, Animal & Plant Biotechnology, Fermentation & Bioprocess technology and Elective paper – Biochemistry (Metabolic Pathway Clinical Biochemistry). A research projects forms an integral part of the M.Sc. (IVth Semester) Curriculum.

The department is currently pursuing research program in the following areas:

1. Plant tissue culture and plant biotechnology
2. Microbiology (at molecular level)
3. Cellular and Molecular immunology

This department is getting financial assistance from UGC and DBT, New Delhi. The department is well recognized all over the country for its standard of teaching and research. The M.Sc. students of this department have always excelled in the competitive examination held for the award of Research fellowships at national level UGC-CSIR NET, GATE etc. The average placement of the passing students per year is 70%. Presently some of the students are also doing research work abroad.

Fees to be paid at time of Admissionn: Rs.16500/- (approx.)

Contact Address: Prof. (Dr.) A. K. Roy
Coordinator,S
P.G. Department of Biotechnology,
T M Bhagalpur University,
Bhagalpur – 812007
Phone No. : 0641-2620094
Fax No. : 0641-2620094
E-mail : pgbiotechmbu@yahoo.co.in
botanyakr@yahoo.co.in

28. UTKAL UNIVERSITY, BHUBANESWAR (10 seats) *

Students admitted to the Teaching programme are eligible for the award of M.Sc. Degree in Biotechnology on successful completion of the Course. The programme is supported by the Department of Biotechnology, Govt. of India, New Delhi.

The M.Sc. Biotechnology is a four-semester (two years) teaching programme offered by the Post Graduate Department of Biotechnology, Utkal University. The main areas of the Course are: Cell Biology and Genetics, Biochemistry, Microbial Physiology and Genetics, Biotechniques, Molecular Biology, Enzyme and Bioprocess Technology, Biology of the Immune System and Biostatistics, Computer Application and Bioinformatics in the first two semesters.

In the later two semesters more specialized and advanced courses i.e., Genetic Engineering, Plant Biotechnology, Animal Cell Biotechnology, Environmental Biotechnology, IPR & Bio-safety are offered. In addition to above, the students shall have to undertake a project work in the 4th semester with an aim to provide them sufficient experience and proficiency in the methodology of Biological Research. Student Seminar is also an integral part of the course curriculum.

The Department has active interaction for both teaching and research with various Departments of the University and a number of National Institutes in and around Bhubaneswar. The Department is well equipped and has established research laboratories. The faculty members are actively working on various Biotechnology related projects funded by DBT, DST, ICMR, UGC, CSIR, BARC and Ministry of Environment and Forest and International collaborative project with DST and Ministry of External Affairs, Italy etc. The Course is taught by the faculty of the Department as well as regular visiting faculties.

Fees to be paid at time of Admission: Rs.21,054/- (approx.) for Male Candidates and Rs.20886/- (approx.) for Female candidates

Contact Address: Prof. G. B. N. Chainy,
Head
P.G. Department of Biotechnology,
Utkal University,
Bhubaneswar – 751004
Phone No. : 0674-2587389
Fax No. : 0674-2587389
E-mail : chainyg@sify.com

29. VEER BAHADUR SINGH PURVANCHAL UNIVERSITY, JAUNPUR (16 seats) *

Students admitted to the programme are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the prescribed course. The syllabus is frequently revised to incorporate latest concepts and recently developed relevant technologies. It includes, First Semester: Cell Biology, Genetics & Molecular Biology, Microbiology, Biochemistry, and Biophysics; Second Semester: General Microbiology, R-DNA Technology, Immunology & Immunotechnology and Biostatistics & Bioinformatics; Third Semester: Industrial Microbiology, plant & Animal Tissue Culture, Applied Molecular Biology and Environmental Biotechnology; Fourth Semester: Biochemical Engineering & Fermentation Technology and Medical Genetics, plus a 4-month project work in a university department, biotech company or reputed national research institution (BARC, BHU, BOSE Institute, CCMB, CIMAP, CDRI, IIVR, ITRC, JNU etc.). Greater emphasis is given on Applied Molecular Biology and Microbial Technology. The entire system of evaluation is external and centrally controlled. During the project work the students bear their personal expenses and other charges, if any, as levied by the host institutions/company. The department actively interacts with research institutions/universities for the purpose of research and training. Five out of six core faculty members have received research grants, from DST, DBT, UGC, CSIR, and CST. The research areas include molecular genetics, microbial biodegradation, mushroom biotechnology, biodiversity etc. The department has received one-time equipment grant from the DBT and is also receiving development grants from UGC/State Govt. in different plans. The department is under consideration for up-gradation as a center for excellence by the State government.

Fees to be paid at time of Admission: Rs.22500/- (approx.) (Per Semester) and Rs. 2000/- as caution money, Hostel Charges extra

Contact Address: Dr. V K Singh,
Head
Department of Biotechnology
Veer Bahadur Singh Purvanchal University,
Jaunpur - 222001, UP
Phone No. : 05452-252538
Fax No. : 05452-252211
E-mail : vbspubiotech@yahoo.com
vksinghmbt@yhaoo.co.in

30. VISVA-BHARATI UNIVERSITY, SANTINIKETAN (15 SEATS) *

Visva-Bharati at Santiniketan founded by Gurudev Rabindranath Tagore is a Central University of National importance since 1951. M.Sc. Biotechnology program was started at this University in the year 1997 and from 2004 it is supported by the Department of Biotechnology, Government of India. Students admitted to the program are eligible for the award of M.Sc. degree in Biotechnology on successful completion of the course in 4 semesters (2 years duration).

The first three semesters have four theory and one lab course in each semester with a provision of summer training for 4 to 6 weeks in any Institute/University of choice in India at the end of the 2nd semester. In the 4th semester besides two theory courses each student write a review and carry out a project work under the supervision of a faculty of the Department spread over the 3rd and 4th semesters which is evaluated at the end of the 4th semester followed by a grand viva-voce. As per the syllabus revised in 2009 the entire course carry 96 credits.

The courses of the first two semesters are designed with the objective to strengthen the basic concepts of life science and biotechniques. These courses are Cell biology, Microbiology, Biomolecules, Immunology, Molecular biology, Computer application, Biostatistics and Instrumentation. The 3rd and 4th semester offer courses in the applied aspects such as Animal biotechnology, Plant biotechnology, Genetic engineering, Bioprocess engineering, Bioinformatics, Bioethics and IPR, and also a course in Entrepreneurship to be introduced in the curriculum. Students are required to present recent advances in Biotechnology in weekly seminars which is also evaluated besides several extra-mural lectures/guest lectures are organised inviting scientists from other Institutions.

The centre has computer and internet facility in the class room for ready availability of students and a seminar library besides a well established central library. The Centre has six core faculty for the M.Sc. Biotechnology course. In addition guest faculties are invited for interaction with the students for better understanding of interdisciplinary fields like Bioinformatics, Bioprocess Engineering and Entrepreneurship. The faculty members are actively working on various biotechnology related projects supported by DBT, DST, UGC, CSIR and MOEF, and also through collaboration with National and International Institutes/Universities. The priority areas of research work of the centre are the following:

1. Biofertilizers
2. Biofuel from microalgae
3. Biodiversity and functional genomics of stress tolerant cyanobacteria
4. Bioremediation using microbial systems
5. Bioactive compounds from plants
6. Cloning and characterization of carbohydrate splitting enzymes
7. Ageing mediated damage to cellular macromolecules and their modulation
8. Host-pathogen interaction in plants
9. Structure and function of plant resistance genes
10. Drought and submergence stress in rice

Fees to be paid at time of Admission: Rs.866/-(approx.)

Contact Address: Prof. S. P. Adhikary,
Head
Centre for Biotechnology
Visva Bharati,
Santiniketan - 731235
West Bengal
Phone No. : 03463 - 261101
Fax No. : 03463-262728
E-mail : adhikarysp@visva-bharati.ac.in
adhikarysp@gmail.com

II. ELIGIBILITY

Bachelor's degree under 10+2+3 pattern of education in Physical, Biological, Agricultural, Veterinary and Fishery Sciences, Pharmacy, Engineering/Technology, 4-years B.Sc. (Physician Assistant Course); OR Medicine (MBBS) OR B.D.S. with at least 55% marks.

Only those candidates who have passed the qualifying examinations in 2008 or thereafter including those who are appearing in 2010 are eligible to apply. In other words, those who have passed the qualifying examination PRIOR to 2008, are NOT eligible to apply.

IMPORTANT NOTE: Before submitting/posting the completed application form, please ensure that you fulfil the eligibility requirements as prescribed above. Also please note that permission to appear in the entrance examination is subject to your fulfilling the minimum eligibility requirements prescribed above. You may, therefore, appear in the entrance examination only if you fulfil the eligibility requirements for M.Sc. Biotechnology Programme. Despite this caution, in case you do not meet the minimum eligibility criteria and still appear in the entrance examination, you will do so at your own risk and cost, and if at any stage, it is found that you do not fulfil the minimum eligibility requirements, the admission, if granted to you, shall be cancelled ipso facto.

III. ELIGIBILITY OF CANDIDATES WHO ARE DUE TO APPEAR IN THE QUALIFYING EXAMINATION

The candidates who are due to appear in the respective qualifying examination prescribed as eligibility for admission shall also be considered for appearing in the entrance examination. Such of the candidates will be allowed to appear in the entrance examination **at their own risk and on the clear stipulation that in the event of their selection, they will be entitled to admission only if they secure the minimum prescribed percentage of marks in their qualifying degree examination** and that they will be required to submit all the documents including final mark-sheet of the qualifying examination (indicating the final and overall percentage of marks) before the deadline for admission fixed by the concerned participating University.

IV. SCHOLARSHIPS

Students selected for admission to M.Sc. Biotechnology Programme of the participating Universities will be eligible to receive scholarship at the rate of Rs.800/- p.m./Rs.1200/- p.m.

Note:The scholarship of Rs. 1200/- p.m. for students joining M.Sc. Biotechnology programme at the School of Biotechnology of JNU would be awarded to all the students during first semester. In the subsequent semesters, the scholarship will be extended only in respect of those students who secure minimum CGPA of 6.00 in the end-semester examinations.

V. RESERVATION/CONCESSION

- a) **Reservation:** 15%, 7½% and 3% of seats shall be reserved for Scheduled Caste (SC), Scheduled Tribe (ST) and Physically Challenged (Handicapped) (PH) candidates respectively. All the SC/ST and PH candidates who have passed the qualifying examination are eligible to apply irrespective of their percentage of marks in the qualifying examination. **Only those SC/ST/PH candidates who have passed the qualifying examinations in 2008 or thereafter (including those who are appearing in 2010) are eligible to apply. In other words, those who have passed the qualifying examination PRIOR TO 2008 are NOT eligible to apply. OBC reservation, wherever applicable, will be implemented as per the policy of each participating University.**
- b) **Concession for Kashmiri Migrants:** 10% marks will be added to the overall marks scored by a Kashmiri migrant candidate in the Entrance Examination. After adding 10% marks, in case he/she is covered in the cut-off point in the merit list, he/she will be offered admission strictly in accordance with his/her inter-se merit alongwith other candidates subject to his/her meeting the minimum prescribed eligibility requirements and also subject to his/her producing valid registration documents issued by the notified authorities certifying the candidate's Kashmiri migrant status.

VI. GUIDELINES/COURSE OUTLINES FOR ENTRANCE EXAMINATION

The question paper for the Entrance Examination will be of three hours duration and divided into two parts:

Part-A will have multiple choice type questions at the level of 10+2 in the subjects: **Physics, Chemistry, Mathematics and Biology. The Candidates will be required to attempt 60 questions:** Total marks for Part A will be (60 questions x 1 mark each) of 60 marks. There will be negative marking and for each wrong answer, ½ (half) mark will be deducted.

Part-B will also have multiple-choice questions of Bachelor's level requiring thinking and analysis. **There will be questions from Physics, Mathematics, Biology (e.g., Botany, Zoology, Biochemistry, Microbiology, Genetics and Molecular Biology) and Chemistry.** The candidates will be required to attempt 60 questions. Total marks for Part B will be 60 questions x3 marks each = 180 marks. There will be negative marking and for each wrong answer one mark will be deducted.

VII. PREVIOUS YEARS' QUESTION PAPERS

For the reference of intending candidates, a set of question papers pertaining to the last five years has been prepared. In order to meet the processing and printing charges, the cost of one set of five years' question papers has been fixed as under:

- (1) At Cash Counter : Rs.80/-
(2) By Post : Rs.180/-

Those who wish to obtain this set of five years question papers by post may write to the Section Officer (Admissions), Jawaharlal Nehru University, New Delhi-110067 alongwith a Bank Draft for Rs.180/- drawn in favour of "JAWAHARLAL

NEHRU UNIVERSITY” payable at New Delhi and a self-addressed unstamped envelope of not less than 30x25 cm. mentioning clearly “Request for “M.Sc. Biotechnology previous years question papers” before 10th April 2010. However last date for issue of sets of question papers at Cash Counter will be 30th April 2010. Please note that even though questions will be of multiple choice, the pattern may change from year to year.

VIII. SELECTION PROCEDURE

Candidates are advised to exercise in the Application Form options for the 30 participating Universities in order of their preference for joining the participating Universities for admission to the M.Sc. Biotechnology programme. The selection will depend strictly on the basis of inter-se merit of the candidate in the Entrance Test vis-a-vis preferences for joining the Universities indicated by the candidate under column (18) of the Application Form. **In case a candidate has not indicated his/her choice for joining a particular University in column (18) of the application form, his/her name will not be considered for that University.**

The Selection procedure will be as follows:

- 1) After the merit list is drawn almost double the number of candidates than the total intake only will be informed of their merit rank in the entrance examination. The candidates will also be informed about the total number of seats in each participating University. The candidates will be asked to exercise their final options once again for joining the Universities in the proforma (which will be sent by JNU). The candidates will be asked to send to JNU a Bank Draft of Rs.5,000/- (Rs.2,500/- in the case of SC, ST, PH and BL candidates) **as initial security deposit** giving their willingness to be considered for admission to the participating Universities in accordance with their options for joining the universities vis-à-vis their inter-se merit in the Entrance Examination. **ALL CANDIDATES ARE ADVISED TO CHECK THE RESULT ON THE WEB SITE OF THE UNIVERSITY (www.jnu.ac.in) IN THE FIRST/SECOND WEEK OF JUNE.**
- 2) The candidates who do not exercise their options for joining any of the participating universities will not be considered for admission to that university/universities.
- 3) After allotment of seats, the JNU will send intimation to the candidates about their allotment of the university and also to the concerned participating university to which the candidate has been selected. Please note that once allotment of University is made on the basis of inter se merit vis-à-vis options, other options of the Universities given by the candidate shall stand frozen. **ALL CANDIDATES ARE ADVISED TO CHECK THE ALLOTMENT OF UNIVERSITY ON THE WEB SITE OF THE UNIVERSITY (www.jnu.ac.in) IN THE FIRST/SECOND WEEK OF JULY.**
- 4) The participating university will then inform the candidate about the complete admission procedure and schedule of their university as well as the amount of fee etc. to be deposited by the candidate. The initial security deposit already sent by the candidate through demand draft to JNU will be sent to the concerned University for refund after first semester.
- 5) In case the candidate is offered admission in accordance with his/her options for joining the universities vis-à-vis his/her inter-se merit, but subsequently in case he/she either does not join the concerned university or withdraws during the first semester then in that event, the initial deposit of Rs. 5,000/- or Rs.2,500/- in the case of SC,ST , PH and BL categories as the case may be, will stand forfeited.
- 6) The initial security deposit of Rs.5000/-, (Rs.2,500/- in the case of SC/ST, PH and BL candidates) will be refunded in full to those of the candidates who are not offered admission to any of the participating university.
- 7) **Candidates may note that request for transfer from one university to another will not be entertained under any circumstances. Therefore, candidates are advised not to make any request in this regard.**
- 8) Only those candidates who will be asked to exercise their option once again will be informed by post/telegram and the list of these candidates will also be available on JNU website (www.jnu.ac.in). However, the candidates are advised to find out through their own sources whether their names appear in the list and thereby make arrangement for sending their final option together with initial security deposit by the stipulated date. **The University will not be responsible for any delay/lapse on the part of postal/telegraph Department.**
- 9) **PLEASE NOTE THAT ONLY ONE MERIT LIST WILL BE RELEASED AND THERE WILL BE NO SECOND LIST UNDER ANY CIRCUMSTANCES.**

Note:- The selection procedure detailed above is under-review and hence subject to change. There is a proposal for introducing the system of counseling of the candidates. The new system if introduced will be available on the website of the University, i.e., www.jnu.ac.in as and when the same is finalized. It will also be communicated to the candidates who fall under the zone of consideration for selection.

IX. ADMIT CARD FOR ENTRANCE EXAMINATION

Admit Cards will be issued by the University only to those candidates who have submitted the Application Form complete in all respects on or before the last date for submission of Application Form i.e., 15th March 2010. The University will not be responsible for any postal delay or irregularity or loss in postal transit resulting in non-receipt of either the filled in Application Form by the University or the Admit Card by the candidates. The candidates may download their Admit Card from the University's website: www.jnu.ac.in after 10th May 2010 and take the Admit Card to the Examination Centre with a copy of latest passport size photograph.

Before taking the entrance examination, please ensure that you fulfil the eligibility requirements as prescribed by the University. Also please note that permission to appear in the entrance examination is subject to your fulfilling the minimum eligibility requirements prescribed for admission as notified in the Prospectus. You may, therefore, appear in the entrance examination only if you fulfil the eligibility requirements as prescribed for M.Sc. Biotechnology Programme under Section-II of this prospectus. Despite this caution, in case you do not meet the minimum eligibility criteria and appear in the entrance examination, you will do so at your own risk and cost, and if at any stage, it is found that you do not fulfil the minimum eligibility requirements, the admission, if granted to you, shall be cancelled ipso facto.

Important Note: The Admit Cards are mailed to the candidates approximately fifteen days before the date of the Entrance Examination by ordinary post. In case, however, Admit Card is not received in time, the candidates may download their Admit Card from the University's website: www.jnu.ac.in after 10th May 2010 and take the Admit Card to the Examination Centre with a copy of latest passport size photograph.

Those candidates who have applied and fulfil the prescribed eligibility conditions but somehow do not receive the Admit Card, or not able to download the Admit Card are advised to contact either the JNU Representative (who will be available at the Examination Centre at least a day in advance) or the Presiding Officer/Principal of the Centre to sort out the problems. **It may be noted that only those candidates will be allowed to appear in the entrance examination whose names appear in the roll-list available with the examination centre. The University will assume no responsibility whatsoever in case the candidate fails to report on the due date and time for appearing in the entrance examination.**

X. TIME -TABLE FOR ADMISSION

- | | | | |
|----|---|---|--|
| 1. | Date of issue of Application Forms | : | February 01, 2010 |
| 2. | Last date for issue of Application Forms: a) by post | : | March 05, 2010 |
| | b) by cash | : | March 15, 2010 |
| 3. | Last date for submission of completed Application Forms | : | March 15, 2010 |
| 4. | Date and time of Entrance Examination | : | May 20, 2010
(9.00 A.M. to 12.00 Noon) |
| 5. | Results of Entrance Examination | : | June / July 2010 |
| 6. | For admission/result queries, visit our website | : | www.jnu.ac.in |

Although the University will inform the candidates falling under consideration zone about their merit in CEEB by post/telegram, it is the responsibility of the candidate to see the result on University website. University will not be responsible for delay/lapse on the part of postal/telegram Department.

XI. HOSTEL FACILITIES

The outstation candidates admitted to the programme of study of the participating Universities will be considered for hostel accommodation as per rules of the concerned University subject to availability of hostel accommodation. Students may please note that grant of admission in a University would not ensure automatic allotment of hostel accommodation and that the same will be offered subject to its availability.

XII. CERTIFICATES AND OTHER DOCUMENTS REQUIRED AT THE TIME ADMISSION

- (a) Two copies of the Matriculation, Higher Secondary Pre-University of Indian School Certificate or Senior School Certificate (10+2) or an equivalent examination certificate, showing the age/date of birth of the candidate duly attested by the Principal of the College/School last attended or a Gazetted Officer;
- (b) A Character Certificate from the Head of the Institution last attended;
- (c) Two attested copies of the statement of marks obtained by the candidate in Senior School, Bachelor's Degree/ Master's Degree examination etc; or their equivalent examination;
- (d) Two attested copies of the Bachelor's Degree and/Master's Degree;
- (e) SC/ST/OBC Certificate, if belonging to SC/ST/OBC category
- (f) A Medical Certificate for PH Candidates certifying nature & percentage of disability issued by the competent medical authority.
- (g) Migration Certificate (in original) from the Head of the Institution/University last attended.

Important: The candidates are also required to produce all originals of the above certificates/documents for verification at the time of registration/admission. In the absence of any of the original certificates/documents, registration/admission shall not be allowed.

XIII. INSTRUCTIONS FOR COMPLETING THE APPLICATION FORM

Notes:

- a) **Please read the Important Notes/Check List given in the inside front cover of the brochure before and after filling-up the Application Form.**
 - b) **Please fill the form in your own handwriting.**
 - c) **Please note down your Application Form Number for future correspondence or retain a photocopy of the filled in Application Form.**
 - d) **The Application Form is to be filled in by the candidate IN BLACK INK ONLY giving complete information using capital letters as far as possible. Please read carefully the instructions given hereunder before filling up the form. Refer to the sample of a filled-in Application Form given in the prospectus. Note especially the right method to darken the bubbles as shown in the Sample Application Form.**
 - e) **First, write in black ink (using capital letters) the required information in the boxes (wherever provided). Then darken the appropriate bubble corresponding to the letter/numeral underneath each box. What you write in these boxes is only for your guidance and verification that you are darkening the bubble corresponding to the correct letter/numeral.**
 - f) **If you wish to change a marking, completely cover the darkened bubble with white fluid, and then darken the appropriate bubble.**
 - g) **Please note that your name, your parent's/guardian's name, and your date of birth should exactly be the same as given in your 10th class or first Board/Pre-University examination certificate. Any deviation, whenever discovered, may lead to cancellation of your candidature.**
1. **Name of the Candidate:** Write your name in capital letters as given in your 10th class certificate or your first Board/Pre-University Examination. Write a only one letter in each box. Leave one, **and only one**, blank box between consecutive words of your name. Darken the appropriate bubble underneath each letter of the name. If your name has several initials, leave one bubble blank after each of them.
 2. **Date of Birth :** Darken the bubbles to indicate date of birth exactly same as given in your High School or your first Board Examination in terms of day, month and year. Use numeral 01 to 31 for date, use numerals 01 to 12 for month and use last two digits for the year of birth.
 3. **Gender:** Darken the appropriate bubble.
 4. **Nationality:** Darken the appropriate bubble. In case you are a Foreign National, please indicate the country to which you belong in the space provided.
 5. **Category:** Darken the bubble corresponding to your category/categories as given below. **Your request for change**

of category subsequent to your submission of Application Form will not be accepted.

Category	Code
General	G E N
Scheduled Caste	S C
Scheduled Tribe	S T
Other Backward Class (Only Non Creamy Layer)	O B C
Foreign National	F N

6(a). Sub-Category: In case you are Physically Challenged (Handicapped) (with a minimum of 40% disability), darken the bubble. Otherwise leave it blank.

6(b). In case your are blind, darken the bubble, otherwise leave it blank.

7. In case you are Kashmiri Migrant, darken the bubble, otherwise leave it blank.

8. State of Domicile: Mention the code of the state to which you belong (refer to the codes given below). Darken the bubble corresponding to the appropriate numeral in each column.:

State/Union Territory	Code	State/Union Territory	Code
Andaman & Nicobar	0 1	Lakshadweep	1 8
Assam	0 2	Madhya Pradesh	1 9
Andhra Pradesh	0 3	Maharashtra	2 0
Arunachal Pradesh	0 4	Manipur	2 1
Bihar	0 5	Meghalaya	2 2
Chandigrah	0 6	Mizoram	2 3
Chattisgarh	0 7	Nagaland	2 4
Delhi	0 8	Orissa	2 5
Daman & Diu	0 9	Pondicherry	2 6
Goa	1 0	Punjab	2 7
Gujarat	1 1	Rajasthan	2 8
Haryana	1 2	Sikkim	2 9
Himachal Pradesh	1 3	Tamil Nadu	3 0
Jammu & Kashmir	1 4	Tripura	3 1
Jharkhand	1 5	Uttar Pradesh	3 2
Karnataka	1 6	Uttaranchal	3 3
Kerala	1 7	West Bengal	3 4
		Any other place(in India)	3 5
		Foreign Countries	3 6

9. Programme of Study: Darken the appropriate bubble corresponding to the programme of study for which you will be taking the Entrance Examination (**Darken only one bubble**).

10. LEAVE IT BLANK.

11. Darken the bubbles corresponding to the appropriate numerals to indicate year of passing or appearing in the qualifying examination (i.e. examination on the basis of which you are seeking admission).

12. Entrance Examination Centre: Darken the bubbles corresponding to the appropriate numerals to indicate the city where you would take the entrance examination. A list of cities where JNU entrance examination is to be held is given below. **No change will be permitted and no correspondence in this context will be entertained.** In case it is not possible to allot the Centre of your choice, the University reserves the right to allot you alternative centre.

Name of the Centre	Centre Code	Name of the Centre	Centre Code
1. Agartala	1001	16. Gangtok	1016
2. Ahmedabad	1002	17. Gwalior	1017
3. Aizawl	1003	18. Guwahati	1018
4. Allahabad	1004	19. Goa	1019
5. Amritsar	1005	20. Gorakhpur	1020
6. Bangalore	1006	21. Hyderabad	1021
7. Bareilly	1007	22. Secundrabad	1022
8. Bhubaneshwar	1008	23. Imphal	1023
9. Calicut	1009	24. Indore	1024
10. Chandigarh	1010	25. Itanagar	1025
11. Chennai	1011	26. Jaipur	1026
12. Coimbatore	1012	27. Jammu	1027
13. Dehradun	1013	28. Katihar	1028
14. Delhi	1014	29. Kolkata	1029
15. Dimapur	1015	30. Lucknow	1030

Name of the Centre	Centre Code	Name of the Centre	Centre Code
31. Mumbai	1031	44. Silchar	1044
32. Madurai	1032	45. Siliguri	1045
33. Nagpur	1033	46. Srinagar	1046
34. Noida	1034	47. Thiruvananthapuram	1047
35. Pant Nagar	1035	48. Udaipur	1048
36. Patna	1036	49. Varanasi	1049
37. Pondicherry	1037	50. Vijayawada	1050
38. Pune	1038	51. Visakhapatnam	1051
39. Raipur	1039	52. Vadodara	1052
40. Ranchi	1040	(Overseas Centre)	
41. Sambalpur.	1041	53. Kathmandu*	1053
42. Shillong	1042	* Subject to sufficient number of candidates available.	
43. Shimla	1043		

Note:

- The University reserves the right to change/cancel any Centre of Examination within India/abroad without assigning any reason.
 - Addresses of the Centres of Examination will be available on our JNU website (www.jnu.ac.in) after 10th May, 2010
13. **Details of Bank Draft enclosed towards Entrance Examination :** Darken the bubbles corresponding to the appropriate numerals to indicate Bank Draft Number, Date of Demand Draft and amount of the demand draft. The entrance examination fee is Rs. 600/- for general category candidates including OBC candidates and Rs. 300/- for the candidates belonging to SC/ST, Blind and Physically Challenged (Handicapped) categories. The entrance examination fee for Foreign Nationals is US\$ 25.00 or Rs.1250/-.

You are required to enclose Crossed Bank Draft (**valid for six months**) for the prescribed examination fee. The bank draft should be drawn in favour of **JAWAHARLAL NEHRU UNIVERSITY** payable at **New Delhi**.

You must write your application form no., name, programme and examination centre opted for on the left hand corner on the reverse of the Bank Draft.

PLEASE NOTE THAT, IF YOUR APPLICATION IS REJECTED FOR ANY REASON, WHATSOEVER OR YOU ARE NOT ABLE TO TAKE THE ENTRANCE EXAMINATION, THE ENTRANCE EXAMINATION FEE PAID BY YOU SHALL NOT BE REFUNDED.

(If the bank draft (valid for six months) towards entrance examination fee is not submitted with the application form, your application will be summarily rejected without any intimation to you).

- Father's Name :** Write your father's name in BLOCK LETTERS exactly as in your 10th class or equivalent Certificate. Write only one letter in each box.
- Please note that Column No. 15. (i.e your name and mailing address) will be scanned and therefore it should be written very clearly IN BLACK INK ONLY. If you make any mistake, you should cover the whole box with exact size white paper slip and write your name and address on that. Your address must not overflow this box.**
- Photograph :** Please write your name and application form number on the backside of a recent good quality colour photograph (taken not earlier than two months) and paste (do not staple) in the box provided. The photograph should be taken preferably with dark coloured clothes in a white background. The approximate size of the photograph should be 3.5 cm. x 4.5 cm. **Do not sign on the photograph and do not get it attested.**
- Signature:** Put your usual signature in black ink within the box provided. Your signature must not overflow or touch the border of the box provided. Your signature establishes your identity. Hence, do not merely write your name in capital letters. This may lead to rejection of your application.
- Choice of University in order of Preference:** Candidates are advised to write the names of the Universities they would like to join (in order of their preference), after carefully going through the eligibility conditions as laid down by each participating University and shown in Section II of this Prospectus.

You should use the following numeral Codes as given below. Darken the bubble corresponding to the appropriate numeral as per your preference in each column:

Name of the University	Numeral Code
1. University of Allahabad, Allahabad	0 1
2. Annamalai University, Tamil Nadu	0 2
3. Banaras Hindu University, Varanasi	0 3

Name of the University	Numeral Code
4. University of Burdwan, Burdwan	0 4
5. University of Calicut, Kerala	0 5
6. Devi Ahilya Vishwavidyalaya, Indore	0 6
7. Goa University, Goa	0 7
8. Gulbarga University, Gulbarga	0 8
9. Guru Jambheshwar University of Science & Technology, Hisar	0 9
10. Guru Nanak Dev University, Amritsar	1 0
11. Himachal Pradesh University, Shimla	1 1
12. HNB Garhwal University, Garhwal	1 2
13. University of Hyderabad, Hyderabad	1 3
14. University of Jammu, Jammu	1 4
15. Jawaharlal Nehru University, New Delhi	1 5
16. Kumaun University, Nainital	1 6
17. University of Lucknow, Lucknow	1 7
18. Madurai Kamaraj University, Madurai	1 8
19. M.S. University of Baroda, Vadodara	1 9
20. University of Mysore, Mysore	2 0
21. University of North Bengal, Siliguri	2 1
22. Pondicherry University, Pondicherry	2 2
23. University of Pune, Pune	2 3
24. R.T.M. Nagpur University, Nagpur	2 4
25. Sardar Patel University, Gujarat	2 5
26. Tezpur University, Tezpur (Assam)	2 6
27. T.M. Bhagalpur University, Bhagalpur	2 7
28. Utkal University, Bhubaneswar	2 8
29. Veer Bahadur Singh Purvanchal University, Jaunpur	2 9
30. Visva-Bharati University, Santiniketan	3 0

Note:

- (i) In the event of selection, the allotment of University will be decided strictly on the basis of the inter se merit of candidate in the entrance examination vis-a-vis the preference of Universities indicated by him/her in Column (18) of the application form.
- (ii) In case a candidate has not indicated his/her preference for joining a particular University in the application form, his/her name will not be considered for that University
- (iii) Candidates may also note that request for change of choice preference or transfer from one university to another will not be entertained under any circumstances. Therefore, candidates are advised not to make any request in this respect.
19. **Academic Record:** While filling up the information relating to the Academic Record, you should strike off the examinations which are not relevant and should indicate the name of the relevant examination i. e. High School, Higher Secondary, Senior School Certificate (10+2), Intermediate or equivalent, B.Sc. (Hons.), B.Sc., B.Tech., B.E. etc. as the case may be. If you are appearing for final year examination you should fill in all the columns except

percentage of marks column wherein you should write "APPEARING". **Please do not forget to write subjects studied in qualifying examination in the column provided for verification of your eligibility.**

In case the University/Institution from where you have passed the examination follows letter grading system/CGPA, you are required to indicate the equivalent percentage in the space provided in the application form for the purpose of determining the eligibility.

If you are presently a student of any University, please write the name of that University also indicate the year in which you will pass out the final year examination from this University.

- **Declaration:** The candidate must sign the declaration at the end of the application form.
- **Telephone/Fax No./Email etc:** The candidate is also advised to give his/her telephone/mobile number; Fax/Email, if any, in the appropriate columns at the end of application form.
- **Acknowledgment Card :** One printed Acknowledgment Card is enclosed with the Application Form. You are required to fill all the columns provided in the Acknowledgement Card. You are also required to write your complete postal address on the space provided in the Card. and affix a postage stamp of Rs.6/- & submit it with the application form. For all further correspondence, you should invariably indicate your Application Form No. and address for communication to the Section Officer (Admissions), Room No. 28, Administrative Block, Jawaharlal Nehru University, New Delhi-110067.
- **Insert the following documents in the 10" X 7" size envelope supplied with the Application Form and post it or drop in the Box in the Administrative Block of the University.**
 1. Bank Draft (Put the Bank Draft in the 9" X 4" size envelope supplied with the Application Form).
 2. Application Form (Refold the application form where it is originally folded).
 3. Acknowledgment Card duly filled in and affixed with postage stamp of Rs.6/-.

Application Forms can be submitted by Registered Post to Section Officer (Admissions), Room No.28, Administrative Block, Jawaharlal Nehru University, New Delhi - 110067 or dropped in the Box in the Administrative Block of the University. The application forms must reach the JNU on or before March 15, 2010. JNU will not accept responsibility for any postal delay or irregularity or loss in postal transit.

PLEASE DO NOT SEND YOUR APPLICATION FORM THROUGH PRIVATE COURIER SERVICES.

Important Notes:

- **If any information furnished by the candidate in the application form is found to be false, his/her admission, if granted on the basis of such information will be cancelled, ipso facto.**
- **Incomplete application forms will be summarily rejected without any reference to the candidates. The candidates are, therefore, advised to carefully complete all the relevant columns of the application form.**
- **Application Forms received after the closing date shall not be entertained. However, where marginal delay in submission of completed form occurs due to pressing reasons, or for circumstances beyond the candidate's control, such of the application forms shall be considered on the merit of each individual case with justification given by the candidate alongwith the form in support of his/her claim for its late submission.**
- **University shall not accept responsibility for any postal delay or non delivery of filled in application forms to the University or non receipt of admit card by the candidate.**
- **Any dispute with regard to any matter relating to admission shall be subject to the jurisdiction of Delhi Courts only.**

Price: Rs. 200/-
Last Date for Submission
15th March, 2010

Application Form for Combined Entrance Examination-2010-11 Biotechnology Programmes

SIDE 1

1. NAME OF THE CANDIDATE AS IT APPEARS IN THE SCHOOL LEAVING CERTIFICATE (IN CAPITAL LETTERS)

SHAWETA SOLANKI

APPLICATION FORM INCOMPLETE IN ANY RESPECT SHALL NOT BE CONSIDERED.

Wrong Methods

Correct Method

Application No.

2. Date of Birth

Day	Month	Year
05	07	89

<p>3. GENDER</p> <p>Male <input type="radio"/></p> <p>Female <input checked="" type="radio"/></p>	<p>5. CATEGORY</p> <p>GENERAL <input checked="" type="radio"/></p> <p>S. C. <input type="radio"/></p> <p>S. T. <input type="radio"/></p> <p>OBC (Non Creamy Layer) <input type="radio"/></p> <p>Foreign National <input type="radio"/></p> <p>Eq. SUB CATEGORY</p> <p>PH <input type="radio"/></p>	<p>6(a). Are You Blind ?</p> <p><input type="radio"/></p>	<p>7. Are you a Kashmir Migrant ?</p> <p><input type="radio"/></p>	<p>8. STATE OF DOMICILE</p> <p>32</p>	<p>9. Programme for Study (Darken only one bubble)</p> <p>M. Sc. Microbiology (BT) <input checked="" type="radio"/></p> <p>M. Sc. (Appl) Biochemistry (BAC) <input type="radio"/></p> <p>M. V. Sc. (MVS) <input type="radio"/></p> <p>M. Tech. Biotechnology (MTB) <input type="radio"/></p>	<p>10. Stream to which applying only for M-Tech Programme</p> <p>Engineering Stream <input type="radio"/></p> <p>Science Stream <input type="radio"/></p> <p>Pharma Stream <input type="radio"/></p>
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<p>11. Year in which qualifying exam passed/appearing</p> <p>2010</p>	<p>12. Entrance Exam Centre Code</p> <p>1030</p>	<p>13. Details of Bank Draft enclosed towards Entrance Examination Fee.</p> <p>DD NUMBER</p> <p>529501</p>	<p>DATE OF DEMAND DRAFT</p> <p>DD MM YY</p> <p>10 02 10</p>	<p>AMOUNT</p> <p>0600</p>
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14. Father's Name (IN BLOCK LETTERS)

K K SOLANKI

IRG 1324

15. YOUR COMPLETE POSTAL ADDRESS INCLUDING YOUR FULL NAME (WRITE IN CAPITAL LETTERS, USE BALL POINT PEN WITH BLACK INK.)

NAME: SHAWETA SOLANKI

ADDRESS: H.N.O. 450
ARYA NAGAR
LUCKNOW
UTTAR PRADESH

PINCODE: 226014

16. PHOTOGRAPH

PASTE HERE FIRMLY YOUR COLOUR PHOTOGRAPH OF GOOD QUALITY TAKEN ON OR AFTER DEC 31, 2009 (SIZE 3.5 CM X 4.5 CM) DO NOT STAPLE

DO NOT GET THE PHOTOGRAPH ATTESTED

Application No.

17. SIGNATURE (WITHIN BOX) IN RUNNING HAND USING BLACK BALL POINT PEN ONLY (DO NOT SIGN IN CAPITALS)

Shaweta Solanki

SIDE 2

18. Choice of University in order of Preference :

Univ. Code 1 17	Univ. Code 2 15	Univ. Code 3 25	Univ. Code 4 30	Univ. Code 5 05	Univ. Code 6 10	Univ. Code 7 29	Univ. Code 8 27	Univ. Code 9 01	Univ. Code 10 09	Univ. Code 11 26	Univ. Code 12 21	Univ. Code 13 23	Univ. Code 14 16	Univ. Code 15 18
Univ. Code 16 22	Univ. Code 17 24	Univ. Code 18 28	Univ. Code 19 20	Univ. Code 20 02	Univ. Code 21 06	Univ. Code 22 19	Univ. Code 23 08	Univ. Code 24 03	Univ. Code 25 07	Univ. Code 26 14	Univ. Code 27 04	Univ. Code 28 12	Univ. Code 29 11	Univ. Code 30 13

19. Academic Record : Take into account marks in those subjects which are counted for awarding class/division.

Examination Passed	Year of Passing and Division	% of Marks CGPA or Grade	Name of School/College/Institution and District in which situated	Name of Board/University	Subject/Papers Offered
* High School/Matriculation/ 10th Class	2005	78.2%	Sophia Sr Sec. School, Ajmer	CBSE	English, Hindi, Maths, Science
* Senior School Certificate (10-2) Intermediate or equivalent	2007	78.5%	CMS (Station Road)	ISC	English, Hindi, Physics, Biology
* B.Sc.(Hons.) / B.Sc. / B.Sc. (Agri.) / B.Tech. / B.E. / B.Vsc. / M.B.B.S. or	1st Year 2008 2nd Year 2009 3rd Year 2010	78.2% 81.3%	Gayatri College of Biomedical Sc. Gayatri College of Biomedical Sc.	H.N.B. Garhwal Univ. H.N.B. Garhwal Univ.	Biototechnology Biototechnology
B.D.S.	4th Year				
Any other Graduate Degree	5th Year				
Aggregate of all years					
* Master Degree	1st Year				
	2nd Year				
	3rd Year				
Aggregate of all years					
Any other examination Please Specify					

* Strike off the Name of Examination which is not applicable.
Are you a student of any University at present. If yes, give details : YES - H.N.B. GARHWAL UNIVERSITY
(Name of the University & Course of Study)

DECLARATION BY THE APPLICANT : I declare that the information furnished by me in the Application Form is true in all respects and in case any entry or information is found to be false, this shall entail automatic cancellation of my admission besides rendering me liable to such action as the University may deem proper. I hereby undertake that I have carefully gone through the eligibility conditions prescribed in the Prospectus for the programme I am applying for and shall appear in the entrance examination after satisfying myself that I do fulfil the same. If at any stage it is found that I do not fulfil the minimum prescribed eligibility criteria, my admission, if granted, shall stand cancelled and I shall have no right to admission whatsoever.

Shaweta Solanki
Signature of the Applicant

Date 12.02.2010 Telephone No. with STD Code 0522-2675618 Fax No. 0522-2622520
Place LUCKNOW Mobile No. 09478061508 E-mail ssolanki@yahoo.com