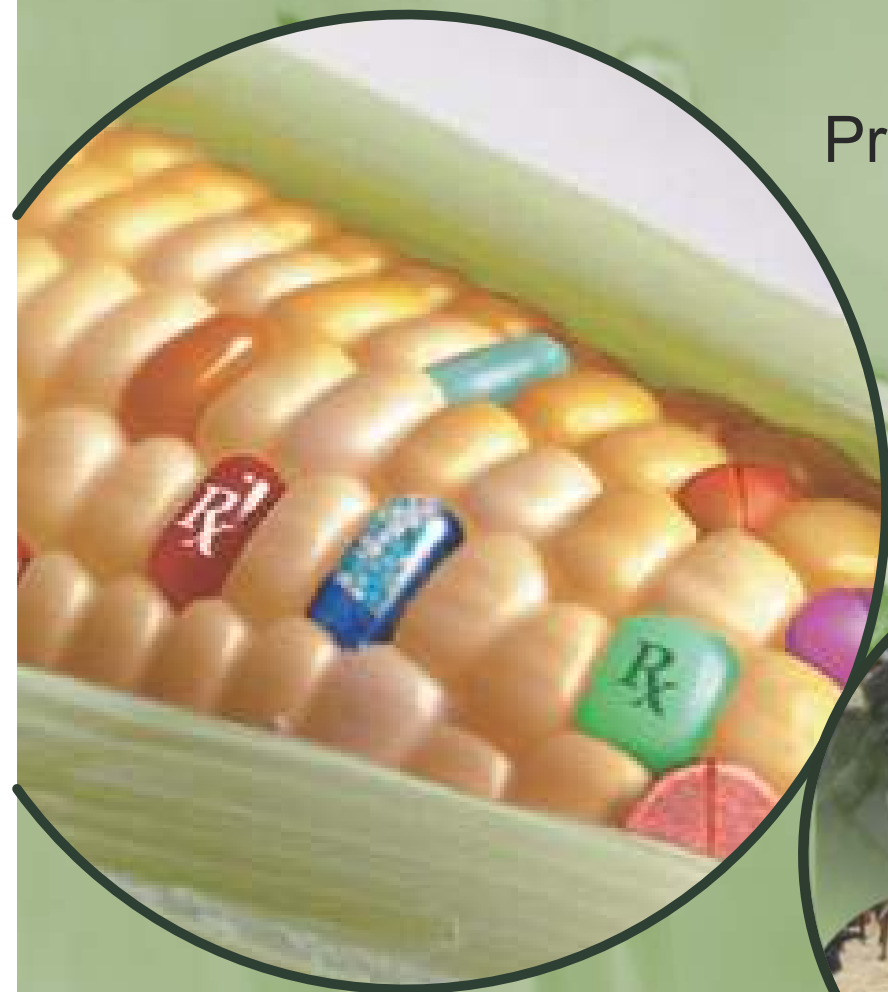


Combined Entrance Examination

conducted by :
Jawaharlal Nehru University
for admission to

M.Sc. (Agri.) Biotechnology & M.V. Sc. Programmes of Study



PROSPECTUS

ACADEMIC SESSION
2014-15



www.jnu.ac.in

Check List

- ✦ **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 IT LOOSE ALONG WITH THE APPLICATION FORM INSIDE THE ENVELOPE.**

Before posting the completed application form please check that:-

- ✦ **You have filled in 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 firmly affixed the recent (not more than two months old) passport size photograph in the Application Form.
- ✦ You have signed the application form in the space marked for signature.
- ✦ **You have passed the qualifying examination in 2012 or thereafter or you are appearing in 2014. In other words, those who have passed the qualifying examination PRIOR to 2012 are NOT eligible to apply;**
- ✦ **You fulfil the eligibility requirements as detailed in the Prospectus. You should, appear in the entrance examination only if you fulfil the eligibility requirements for M.Sc. (Agri) Biotechnology.M.V.Sc. 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 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 Category Candidates

(PH includes OH, VH and HH)

Rs. 300/-

Foreign Nationals

US\$ 25.00 or Rs.1550/-

- ✦ **Application Forms can be submitted only by Registered Post/Speed Post to Section Officer (Admissions), Room No.28, Administrative Block, Jawaharlal Nehru University, New Delhi - 110067. The completed Application Form must reach JNU latest by (i) offline Application Form by 28th March, 2014 and (ii) printed copy of the online Application Form by 2nd April, 2014. 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 OR ANY OTHER POSTAL MODE EXCEPT REGISTERED POST/SPEED POST

**Combined Entrance Examination
conducted by
Jawaharlal Nehru University
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Programmes of Study**

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PROSPECTUS

**ACADEMIC SESSION
2014-15**

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I. GENERAL

Biotechnology is a multi-disciplinary area in the educational scene and programmes have been developed to meet the growing demand for trained manpower for any meaningful Biotechnology activity. The Government of India has allotted high priority to development in the area of Biotechnology and its exploitation in agriculture and other related disciplines.

Jawaharlal Nehru University will hold Combined Entrance Examination for admission to:-

[i] M.Sc. (Agri.) Biotechnology Programme being offered at the following participating Universities :

1. Assam Agricultural University, Jorhat
2. Bidhan Chandra Krishi Viswavidyalaya, West Bengal
3. Ch. Sarwan Kumar H.P.Krishi Vishwavidyalaya, Palampur;
4. G.B. Pant University of Agriculture and Technology, Pant Nagar;
5. Indira Gandhi Agricultural University, Raipur;
6. Kerala Agricultural University, Thrissur;
7. Vasantryao Naik Marathwada Krishi Vidyapeeth, Latur (Maharashtra);
8. Orissa University of Agriculture & Technology, Bhubaneswar;
9. Tamil Nadu Agricultural University, Coimbatore;
10. University of Agricultural Sciences, G.K.V.K., Bangalore; and
11. University of Agricultural Sciences, Dharwad.
12. Rajendra Agricultural University, Samastipur

[ii] M.V.Sc. Programme is being offered at

1. Lala Lajpat Rai University of Veterinary and Animal Sciences , Hisar;
2. G.B. Pant University of Agriculture & Technology, Pantnagar;
3. Nanaji Deshmukh Pashu Chikitsa Vigyan Vishwavidyalaya, Jabalpur,
4. Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana.
5. Maharashtra Animal & Fishery Sciences University, Nagpur
6. Assam Agricultural University, Guwahati
7. Sher-e-Kashmir University of Agricultural Sciences & Technology of Kashmir, Srinagar

The Examination will be held on May 19, 2014, at Centres all over the country (detail of Centres is shown under Section-XII of the Prospectus).

1. ASSAM AGRICULTURAL UNIVERSITY, JORHAT (05 seats) *
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The Department of Agricultural Biotechnology was established in 1989 at Assam Agricultural University, the oldest Agricultural University in the North East of India. This Department, supported by the Department of Agricultural Biotechnology, Govt of India, has been conferring M.Sc. degree in Biotechnology ever since its inception and from 2010-11 and now offers Ph.D. degree for students with both Agricultural and non-Agricultural sciences background. The Department has of 12 faculty members, majority of whom have been well trained abroad on different areas of Biotechnology. It also has well-equipped laboratory facilities for Gene Technology, Plant Genomics, Molecular Markers, RNAi, Microbial Biotechnology, Bioinformatics etc. with state of the art equipments like Roche Pyrosequencer, ABI Capillary Sequencer etc. Based on the infrastructure, human resource and publications, the department has been ranked "B+" by DBT for M.Sc. Agricultural Biotechnology teaching programme.

Several competitive research grants from national agencies like DBT, ICAR, DST, UGC etc. and international agencies such as Kirkhouse Trust, UK have been awarded to the Department. In addition, several international collaborating research projects under Indo-Swiss, Indo-Australia, Indo-USA collaborative funds have been completed and are presently running in the Department. A major research achievement of the department has been generation of insect resistant transgenic chickpea lines which have been transferred to public (IIPR, Kanpur; ICRISAT; Patancheru; UAS, Darwad and PAU, Ludhiana) and private (Sungro Seeds) organizations for varietal development. As recognition of the department's achievement in teaching and research, in 2011 it was awarded a Centre of Excellence in Agricultural Biotechnology.

Fees to be paid at the time of Admission: Approx Rs.6900.00/- + Rs.3250.00 (Hostel fee including mess advance).

Contact Address: Dr. M. K. Modi,
Coordinator
Professor & Head
Department of Agricultural Biotechnology,
Assam Agricultural University, Jorhat,
Assam - 785013

Phone No. : 0376-2340095, 2304002(R), 9435091017(M)
Fax No. : 0376-2340001, 2340101, 2340095
E-mail : mkmodi@gmail.com
mkmodi@aau.ac.in

2. BIDHAN CHANDRA KRISHI VISWAVIDYALAYA, WEST BENGAL (05 seats) *

One of the oldest and biggest faculties of the university is the Faculty of Agriculture. There are 16 Departments under the Faculty of Agriculture. The specializations for teaching, research and extension have been varied, catering to the developmental needs of agriculture aspects of the state. There is provision for intake of 163 students at the Master's degree level in agriculture, covering 15 disciplines. A good number of students (106 approx.) enroll themselves for admission to the Ph.D. programme (63 credit hours) each year. Apart from attending the course work of 40 credit hours (except dissertation), the Master's degree students also carry out research work and prepare dissertation (20 credit hours), which is evaluated by the external examiner and forms an integral part of the Masters degree.

The University is in the process of establishing a Regional Nuclear Agricultural Research Centre in collaboration with the Board of Research on Nuclear Sciences. A MOU will be signed with the Bhaba Atomic Research Centre (BARK) soon. Necessary instruments and facilities have been put in place for catering to the biotechnology-related work. It is indeed hoped that the teaching and the research work in the field of biotechnology will reap a rich harvest based on qualified Faculties and the infrastructures so developed.

Fees to be paid at the time of Admission: Rs.4296/- (Hosteler) Rs.2686/-(Day Scholar)

Contact Address: Prof. Srikanta Das,
Dean
Faculty of Agricultural,
Bidhan Chandra Krishi Vishwavidyalaya,
PO: Krishi Viswavidyalaya
P.S. Haringhata, Mohanpur
Dist. Nadia, West Bengal-741252
Phone No. : 033-25878338
E-mail : deanofag.bckv@gmail.com

3. CH. SARWAN KUMAR H.P. KRISHI VISHWAVIDYALAYA, PALAMPUR (10 seats) *

CSK H.P. Krishi Vishwavidyalaya, Palampur offers programme in Agricultural Biotechnology leading to the award of M.Sc. Agricultural Biotechnology degree. This programme is instituted in collaboration with the CSIR-Institute of Himalayan Bioresource Technology, Palampur. Under this programme, the students admitted are imparted intensive training in the basic principles and applied aspects, both in theory and practicals of Plant Biotechnology. The students are eligible for the award of studentship of Rs. 4500/- per month.

The thrust areas of these research include, DNA fingerprinting; gene tagging, gene pyramiding and markers-assisted selection; transgenics; biotic and abiotic stress-induced gene expression and cloning; metabolomics and proteomics; and in vitro techniques in crop improvement.

Fees to be paid at the time of Admission: Rs.26,000/- Approx.

Contact Address: Dr. T.R. Sharma,
Prof. & Head-cum-Coordinator
Department of Agricultural Biotechnology,
CSK Himachal Pradesh Krishi Vishwavidyalaya,
Palampur - 176062 Kangra (HP)
Phone No. : 01894-230314
Fax No. : 01894-230511, 230371
E-mail : trsharma@hillagric.ac.in
sharmat88@yahoo.com

4. G.B. PANT UNIVERSITY OF AGRICULTURE & TECHNOLOGY, PANTNAGAR (25 seats for M.Sc. (Agri) and 05 seats for M.V.Sc) *

Department of Molecular Biology & Genetic Engineering at G.B. Pant University of Agriculture & Technology serves as the nodal department for Pantnagar Biotechnology Program, which celebrated its silver jubilee year (1988-2013) after completion of 25 years of excellence in teaching and research. The department offers both M.Sc. (Agri.) and M.V.Sc. courses in Molecular Biology and Biotechnology. The Department has accomplished several milestones including the department being recognized as one of the best department of the College of Basic Science & Humanities by UGC appointed NAAC accreditation team & our Master's Program in Agricultural Biotechnology being awarded 'A' rank by Department of Biotechnology (Govt. of India, 2011) and also the department being one of the Top Ten Biotech schools in the country.

Students with B.Sc. (Ag.), B.Sc. in ZBC/PCM and B.Sc. (Biotechnology) are eligible for M.Sc. (Agri.) Programme in Molecular Biology & Biotechnology. However, students except with B.Sc. (Ag.) degree, will have to study remedial courses of 24 credit hours in relevant fields of Agriculture and the degree awarded will be M.Sc. (Agri.) Molecular Biology and Biotechnology and for them the course duration will be of three years with same DBT norms of studentship (provision for only two years). For candidates desirous of taking admission in M.V.Sc. (Molecular Biology & Biotechnology), the minimum eligibility in B.V.Sc. with not less than 6.000/10.000 or 3.000/5.000 or 55% marks in aggregate. Candidates admitted to the Programme are awarded scholarship of Rs. 4,500/- and Rs. 8,000/- per month for M.Sc. (Agri.) and M.V.Sc. respectively, the major thrust areas of research at this department include Recombinant DNA Technology, Tissue culture, Signal transduction in relation to host-parasite interactions, Abiotic and Biotic stress management, Transgenic development for nutritive value addition and disease resistance, Molecular Cytogenetics, Nutraceuticals, Nutrigenomics, Proteomics, Bioprospection and Metabolomics, Edible and Recombinant Vaccine production, Immunodiagnosics for plant and animal disease surveillance and Embryo Transfer Technology.

Fees to be paid at the time of Admission: Rs.32457/- (approx.) (including of food advance of Rs.15000/-)

Contact Address: Dr. Anil Kumar,
Professor & Head,
Department of Molecular Biology & Genetic Engineering,
College of Basic Sciences & Humanities,
G B Pant University of Agriculture & Technology,
Pantnagar -263145 (U S Nagar)
Uttarakhand
Phone No. : 05944-233898
Fax No. : 05944-233287, 233473
E-mail : ak_gupta2k@rediffmail.com

5. INDIRA GANDHI KRISHI VISHWAVIDYALAYA, RAIPUR (13 seats) *

Indira Gandhi Krishi Vishwavidyalaya, Raipur, offers post-graduate programme in Biotechnology and successful candidates are eligible for the award of **M.Sc. in Plant Molecular Biology & Biotechnology** .

Major thrust areas of teaching and research are Molecular Biology, Plant Tissue Culture & Genetics Engineering, Genomics & Proteomics, Nano-Biotechnology, Bio-informatics etc. The Centre is actively involved in research on various aspects of Genomics particularly related to Biotic and Abiotic Stress and in the area of transgenics. The department has number of projects funded by DBT, DIT, CGCOST, ICAR, State Government with good international linkage. The courses are innovative and cover basic, fundamental and specialized topics. Submission of thesis dissertation based on research projects carried out by students is part of the degree programme. The students are eligible for award of studentship of Rs.4500/- per month given by DBT.

Fees to be paid at the time of Admission: Rs.8500/- (Approx)

Contact Address: Dr. S.B. Verulkar,
Professor & Head,
Department of Plant Molecular Biology and Biotechnology,
Indira Gandhi Krishi Vishwavidyalaya,
Raipur -492006
Chhattisgarh
Phone No. : 0771-2442069
Fax No. : 0771-2442131
E-mail : hod.biotech.igkv@gmail.com
satishverulkar@gmail.com

6. KERALA AGRICULTURAL UNIVERSITY, THRISSUR (13 seats) *

Candidates having B.Sc. (Agriculture)/ B.Sc. (Horticulture)/ B.Sc. (Ag. Biotechnology) degree, as four year programme and qualifying the Entrance Examination are eligible for admission. Students admitted to the programme are eligible for the award of M.Sc. (Ag.) Plant Biotechnology on successful completion of the course.

The MSc. Agricultural Biotechnology is a Four Semester programme supported by the DBT and offered by the Center for Plant Biotechnology and Molecular Biology, College of Horticulture located in the main campus of Kerala Agricultural University, Vellanikkara, Thrissur. The evaluation is done in 10-point credit system. The courses are designed in Major (Biotechnology) and Minor (Horticulture, Biochemistry, Microbiology, Entomology and Research Methodology) fields of study. The students will have to register for various courses to satisfy 35 credit hours. Twenty credit hours are meant for thesis research and the students should submit a thesis based on their research project, in partial fulfillment of the MSc. programme. Students seminar is also an integral part of the curriculum. The students are paid a scholarship of Rs. 4500/- per month.

The syllabus covers core courses and optional courses in Plant Biotechnology and Molecular Biology. The courses include techniques in Molecular Biology, Plant Tissue Culture and Genetics Engineering, Molecular Diagnostics, Industrial Biotechnology, Gene isolation and characterization, Bioinformatics etc. Minor courses include Plant Physiology, Plant Biochemistry, Microbiology, Plant Breeding and Genetics Horticulture etc. The areas of thesis research include DNA finger printing, Marker assisted selection, Gene cloning and characterization, Enzyme kinetics, differential gene expression, Real time PCR assays, Plant tissue culture etc. The centre is well equipped with all facilities for advanced teaching and thesis research. The facilities include Genetic Transformation lab with Biolistic gene gun; Molecular Biology lab with High Speed Refrigerated Centrifuge, Nanodrop spectrophotometers, Bioanalyser, Real Time and Gradient PCR machines, Phosphorimager, electrophoresis units, Sequencing page units and Gel documentation systems. Translation Lab facilities include, Growth Chamber, 2-Dimensional gel electrophoresis units, Cold Room and facilities for electroblotting and detection techniques. Biochemistry lab is equipped with HPLC and other Chromatographic units, The Cell biology lab is equipped with fluorescent, phase contrast and stereo microscopes. A Plant Tissue Culture Research lab with mass production facility is also present. Bioinformatics Centre functioning with DBT aid gives support for computational Biology work.

The centre has active interaction for both teaching and research with a number of national institutions and faculty members are actively working on Biotechnology related projects funded by DBT, DST, ICAR, Ministry of Science etc. More details can be had from the site – www.kau.edu, www.kauhort.in/cpbmb.htm

Fees to be paid at the time of Admission: Approx Rs. 10,000/- + Rs. 11,050/- (Hostel fee including mess advance)

Contact Address: Dr.P. A. Valsala,
Professor & Head
Centre for Plant Biotechnology and Molecular Biology,
College of Horticulture,
IT-BT Complex,
Kerala Agricultural University,
Vellanikkara, Thrissur – 680656
Kerala
Phone No. : 0487-2438577, 9447918452 (M)
Fax No. : 0487-2371994
E-mail : valsala.pa@kau.in
cpbmb@kau.in

**7. VILASRAO DESHMUKH COLLEGE OF AGRICULTURAL BIOTECHNOLOGY
VASANTRAO NAIK MARATHWADA KRISHI VIDYAPEETH, LATUR (MAHARASHTRA) (12 seats) ***

The students will be awarded the M.Sc.(Agri) Biotechnology degree on successful completion of the course.

The students are taught basic principles and applied aspects of biotechnology in plant system. The syllabus covers basic courses in principals of Biotechnology, Fundamentals of Molecular Biology, Molecular Cell Biology, Biostatistics and Computers, Microbial Biotechnology, Plant Tissue Culture & Genetic Transformation, Techniques in Molecular Biology I, Genomics and Proteomics, Biosafety, IRP and Bioethics, Immunology and Molecular Diagnostics, Dynamic Web design, introduction to Bioinformatics, Molecular Breeding, Master's Seminar, Master's Research.

Fees to be paid at the time of Admission: Rs.11400/- (approx. including Tution/Hostel/other fee)

Contact Address: Dr. B.B. Bhosle,
Coordinator
Vilasrao Deshmukh College of Agricultural Biotechnology,
Vasantrao Naik Marathwada Krishi Vidyapeeth,
Nanded Road, Latur - 413512 (Maharashtra)
Phone No. : 02382-251366
Fax No. : 02382-251366
E-mail : coablatur@rediffmail.com

8. ORISSA UNIVERSITY OF AGRICULTURE & TECHNOLOGY, BHUBANESWAR (10 seats) *

Orissa University of Agriculture and Technology, Bhubaneswar is the 2nd oldest Agricultural University of India. The University offers 2 years Post Graduate programme in Agriculture Biotechnology and successful candidates are awarded **M.Sc. (Agril.) Biotechnology** degree.

During the 2 years programme the students are exposed to both basic and applied aspects of biotechnology and are taught the multidisciplinary areas of Agricultural and allied field of Biotechnology. The syllabus covers core courses in principles of Biotechnology, Fundamentals of Molecular Biology, Molecular Cell Biology, Techniques in Molecular Biology, Plant Tissue Culture and Genetic Transformation, Biostatistics and Computers. The supporting courses like principles of

Genetics, Enzyme Technology, Genomics and Proteomics, Gene Regulation, Microbiology, Immunology and Molecular Diagnostics, Nano Biotechnology, Microbial and Industrial Biotechnology, Molecular Breeding, Environmental Biotechnology, Biosafety, IPR and Bioethics, Bioinformatics are provided. Minor Courses in the syllabus are Plant Physiology, Plant Biochemistry, Cell Biology and Cytology and Genetics and Plant Breeding. Submission of thesis based on research findings of the student is essential for the degree programme. The areas of thesis research include DNA fingerprinting, Gene cloning, DNA library, Molecular cytogenetics, Marker-assisted selection, Transgenics, Gene-cloning and expression, Enzyme technology, Molecular Physiology, Phytochemistry and In vitro techniques in crop improvement. Besides, the students have an opportunity to undertake training in National / International Institutes and reputed Biotechnology industries inside the country. Students from other Institutes/Universities are doing their project work for short periods (1-6 months) as well as Ph. D. studies in related fields.

Candidate admitted to the programme are eligible to get studentship of Rs. 4500/- per month.

Fees to be paid at the time of Admission: Rs.16,250/- (Approx)

Contact Address: Prof. Gyana Ranjan Rout,
Professor & Head,
Department of Agricultural Biotechnology,
College of Agriculture,
Orissa University of Agricultural and Technology(OUAT)
Siripur, Bhubaneswar – 751003, Odisha
Phone No. : 0674-2397755
Fax No. : 0674-2397755
E-mail : grout@rediffmail.com
headabt_bbsr@rediffmail.com

9. TAMIL NADU AGRICULTURAL UNIVERSITY, COIMBATORE (15 seats) *

Students are awarded **M.Sc Biotechnology** degree on successful completion of the course. The students are introduced to basic principles and applied aspects of biotechnology in plant systems. They are given intensive training in the multidisciplinary areas of plant biotechnology which covers recent advances in various fields of cell biology, molecular biology, genomics, proteomics, and genetic engineering. The minor courses like plant biochemistry, plant physiology and bioinformatics are added to the major courses in the programme. Supporting courses like statistical methods, Design of experiments and computer applications were also provided to the students to get needed knowledge in related fields. Submission of dissertation based on research carried out by the student is also a part of the degree programme.

All the students are eligible to get studentship of Rs.1800/- per month.

Fees to be paid at the time of Admission: Tution fee : Rs.20100/- (approx.). Hostel fees Rs.6000/-(approx)

Contact Address: Dr. R. Chandrababu,
Director
Centre for Plant Molecular Biology & Biotechnology,
Tamil Nadu Agricultural University,
Coimbatore - 641003
Tamil Nadu
Phone No. : 0422-6611262, 2431672
Fax No. : 0422-2431672
E-mail : directorcpmb@tnau.ac.in

10. UNIVERSITY OF AGRICULTURAL SCIENCES, G.K.V.K., BANGALORE, KARNATAKA (10 Seats)*

A Bachelor's degree in Agriculture / Horticulture / Forestry / Sericulture / Agriculture Biotechnology from any Agricultural / Deemed universities / Institutions recognized by ICAR in terms of course duration of Four years with a minimum CGPA of 2.25/4.0 or OGPA of 6.50 / 10 or its equivalent. Candidates who have studied under trimester system should compulsorily submit a copy of the certificate declaring equivalent percentage of marks issued by the competent authority.

The students will be awarded **M.Sc. (Agri.) Plant Biotechnology** degree. The Department of Plant Biotechnology, University of Agricultural Sciences, Bangalore is one of the best Department in the University with modern equipments like Gene sequencer, HPLC, Fermenters, RT-PCR, Floor model Ultra Centrifuge and all types of molecular biology equipments. University of Agricultural Sciences, Bangalore is winner of the Sardar patel Best Agricultural University award in the year 2002, initiated several research progammes in Agri. Biotech. Bangalore being a hub of IT-BT, the University has established collaborations with the Biotechnology Industries and Institutes. The staff of the Biotechnology Department is working in the research areas of Gene isolation, Transgenic, Biopharming, Molecular Breeding, Microbial Biotechnology and Bioinformatics. The University is successful in attracting competitive grants for time bound projects from central and state governments.

All the students are eligible to get studentship as per DBR-HRD norms.

Fees to be paid at the time of Admission: Rs. 20225/- (General Category); Rs. 10600/- (SC/ST category)+
Rs. 12000/- (Hostel deposit Refundable) for all students.

Contact Address: Dr. P H Ramanjini Gowda,
Professor & Coordinator
Department of Plant Biotechnology,
University of Agricultural Sciences,
Gandhi Krishi Vignana Kendra,
Bengaluru – 560065
Phone No. : 080-23330153 EXTN.263
FAXNO. : 080-23330277
E-mail : ramanjini@yahoo.com

11. UNIVERSITY OF AGRICULTURAL SCIENCES, DHARWAD (10 seats) *

University of Agricultural Sciences, Dharwad offers M. Sc. (Agri.) in Molecular Biology and Biotechnology. The Department of Biotechnology, which is a part of the Institute of Agri-Biotechnology (IABT), has state-of-the-art equipment and facilities for research. The research at IABT focuses primarily on agricultural biotechnology and focused on cloning agriculturally important genes from plants and microbial sources, molecular mapping, plant transformation, marker assisted selection and validation of genes for biotic and abiotic stresses, gene silencing, QTL detection and transfer, food biotechnology, metagenomics etc. The students need to do a thesis research project as part of the master's programme.

Fees to be Paid at the time of Admission: Rs.18870/- (approx.) for General Category Rs.7370/- (approx.) for SC/ST category and Rs.8995/- (approx.) for category-I*.

* Likely to increase by 20% during 2014-15.

Contact Address: Dr. P.U. Krishnaraj
Professor and Head
Department of Biotechnology
University of Agricultural Sciences,
Krishinagar, Dharwad - 580005
Phone No. : 0836-2747627, 2744922
Fax No. : 0836-2747627
E-mail : krishnarajpu@gmail.com

12. RAJENDRA AGRICULTURAL UNIVERSITY, BIHAR (10 seats) *

Rajendra Agricultural University, Bihar, Pusa offers M.Sc. Degree Programme in Agriculture Biotechnology.

This is a four semester programme supported by the DBT offered by Faculty of Basic Sciences & Humanities, Rajendra Agricultural University, Bihar, Pusa. However candidates with three year B.Sc. (Biology) degree will have to study for three year duration clearing some remedial courses finally leading to award of M.Sc. degree in Agriculture Biotechnology. The evaluation is done in 10 point credit system. The students will have to offer a minimum 35 credit hours courses in Major subject Agricultural Biotechnology, minor and supporting courses and 20 credit hours for research works.

The major thrust areas in teaching and research are Tissue Culture/Cell Biology and Molecular Biology/Genetic Engineering/Molecular Biology of Biotic and Abiotic Stresses/Plant Rhizobium interaction/Protoplast fusion/Plant transgenics etc. Submission of thesis dissertation based on research programme carried out by students is part of the degree programme.

Infrastructural facilities for various well equipped laboratories like Tissue Culture/Molecular Biology/Bio-imaging/Cell Biology/Genetic Transformation/Biochemistry/Computer Laboratory/Recombinant DNA Laboratory, Microbiology/Bioinformatics etc. are available.

Fees to be Paid at the time of Admission: Rs.12665/- (approx.) for General Category, Rs.9915/- (approx.) for SC/ST Category, Rs.10365/- for EBC.

Contact Address: Prof. V K Shahi,
Coordinator
Faculty of Basic Science and Humanities,
Rajendera Agricultural University,
Pusa, Samastipur
Bihar - 848125
Phone No. : 06274-240272
Fax No. : 06274-240272
E-mail : deanfbshpusa@yahoo.co.in
vkshahi2004@yahoo.com

13. LALA LAJPAT RAI UNIVERSITY OF VETERINARY AND ANIMAL SCIENCES, HISAR (13 seats) *

Lala Lajpat Rai University of Veterinary & Animal Sciences, Hisar offers post-graduate programme (M.V.Sc) in Animal Biotechnology. Candidates admitted in M.V.Sc. programme are eligible for "studentship at the prescribed rate of Rs. 8000/- per month" from "Department of Biotechnology"(Human Resources Development Project), Govt. of India.

Master's in Animal Biotechnology comprises of course work (basics and specialized courses of Animal Biotechnology) and research work in any relevant areas of Animal Biotechnology.

Thrust Areas of Postgraduate course work (M.V.Sc.): Core courses of Master's degree programme (M.V.Sc.) in Animal Biotechnology are fundamental of cell and Molecular Biology, Animal cell culture, Principles of Biotechnology, Techniques in Molecular and Genetic Engineering, Basic and applied Biotechnology, Bioinformatics, Biodiversity, Biosafety and Bioethics, Molecular Forensics, Industrial Biotechnology and Probiotics, Animal Genomics and Feed Biotechnology.

Thrust Area of Postgraduate Research Work (M.V.Sc.): Post graduate research work covers investigation on livestock genomics, DNA based diagnostics, recombinant DNA technology, gene expression, molecular characterization and phylogenetic analysis of bacterial and viral pathogens, genetic aspect of assessment of quality of oocyte and sperm for "in-vitro fertilization and embryo transfer", micro-manipulation of embryos, sexing and transfer of embryos.

Department of Animal Biotechnology is well equipped with modern research infrastructure as well as trained and experienced postgraduate faculty of international repute to supervise post-graduate teaching and research.

Fees to be paid at the time of Admission: Rs.36500/- (including hostel charges)

Contact Address: Dr. M.L. Sangwan,
Coordinator & Professor
Department of Animal Biotechnology,
College of Veterinary Sciences,
Lala Lajpat Rai University of Veterinary
and Animal Sciences,
Hisar - 125004, Haryana
Phone No. : 01662-289132 (O), 09896577804 (M)
Fax No. : 01662-284312, 289547
E-mail : manoharsangwan@gmail.com
mlsangwan@11ruvas.edu.in

14. NANAJI DESHMUKH PASHU CHIKITSA VIGYAN VISHWAVIDYALAYA, JABALPUR (10 seats) *

Animal Biotechnology centre, Nanaji Deshmukh Pashu Chikitsa Vigyan Vishwavidyalaya, (formally Madhya Pradesh Pashu Chikitsa Vigyan Vishwavidyalaya, Jabalpur) Jabalpur offers 2 years Post Graduate degree programme in Animal Biotechnology and candidates are awarded M.V.Sc. & A.H. degree in Animal Biotechnology. The candidates having B.V.Sc. & A.H. degree are eligible for admission and selected candidates are awarded fellowship of Rs. 8000/- per month under Department of Biotechnology Human Resource Development Project.

Out of the total duration of 2 years, (4 semesters), the students are exposed to course work of 35 credits during first two semesters. The thesis research starts after successful completion of comprehensive examination during 3rd semester.

For the degree programme, ICAR course curriculum is followed exclusively. Under the course work, the students are exposed to core courses like fundamental of cell and molecular biology, animal cell culture, animal genomics, reproductive biotechnology, molecular diagnosis and various techniques in genetics engineering. Along with core courses, the student has clear supportive, and non credit but essential courses also besides minor subjects.

The centre is conducting high quality research work like RNAi technology to increase meat production, cloning by somatic cell nuclear transfer (SCNT), PCR sexing of embryos, transgenesis, DNA based diagnosing, Recombinant DNA technology and Gene expression and characterization, cell line production and characterization, in vitro fertilization, genetic characterization of livestock using molecular markers, epigenetic studies. Accordingly the students are assigned research problems on the above mention modern technologies. Due to high quality research and publications the centre has been awarded two world bank funded ICAR-NAIP research project. Out of them one has been awarded as nation lead centre on "Development of goat having knocked down myostatin gene through RNA interference technology to enhance the meat production". (www.naip-mstn-knockdown.org)

Fees to be paid at the time of Admission: Tution fee : Rs.24400/- (approx.)

Contact Address: Prof. B. C. Sarkhel,
Course Coordinator & Director
Animal Biotechnology Centre,
J N K V V Campus, Adhartal,
Nanaji Deshmukh Pashu Chikitsa Vigyan Vishwavidyalaya,
Jabalpur - 482004 (M.P.)
Mob. No. : 09827449220
Fax No. : 0761-4044757
E-mail : directorabtc.mppcvv@gmail.com
sarkhelbc@yahoo.co.in

15. GURU ANGAD DEV VETERINARY AND ANIMAL SCIENCES UNIVERSITY, LUDHIANA (08 SEATS) †

The School of Animal Biotechnology of Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana (Punjab), under the aegis of "Post-Graduate Institute of Veterinary Education and Research" offers M.V.Sc./M.Sc (Animal Biotechnology) and Ph.D. (Animal Biotechnology). Students with B.V.Sc & A.H. are eligible for M.V.Sc and those with B.Sc. (Medical/ Biotechnology/ Biochemistry/Microbiology/Molecular Genetics) for M.Sc. Students with non-veterinary background have to take some deficiency courses.

Course work covers basic, fundamental and specialized areas of Animal Biotechnology and main thrust areas of the school include expression profiling of genes related to disease tolerance, production and reproduction; molecular characterization of genetic diversity in farm animals; Genomics and transcriptomics vis-à-vis marker assisted selection in livestock species; Development of cost effective, rapid, highly sensitive and specific field diagnostic kits, potent vaccines against economically important animal diseases; stem cell biology.

The School has highly qualified faculty, state of the art research laboratories (Animal Genomics, Tissue culture, hybridoma, in-situ hybridization, molecular diagnostics and vaccinology, stem cell biology, bioinformatics) equipped with latest instruments and extra mural funding in the form of projects from Department of Biotechnology, ICMR, UGC and other institutions for conducting teaching, research and training in various areas of Biotechnology.

Candidates admitted to the programme are eligible for award of scholarship of Rs. 4500/- and Rs. 8000/- per month for M.Sc. and M.V. Sc., respectively under the Human Resource Development Project of the DBT, Govt. of India.

Fees to be Paid at the time of Admission: Non-Boarder Rs.47215/- Boarder Rs.51525/- (approximately, includes Rs.12000/- approx as refundable security)

Contact Address: Dr. Ramneek,
Director
School of Animal Biotechnology,,
Guru Angad Dev Veterinary and Animal Sciences University,
Ludhiana-141004, Punjab
Phone No. : 0161-2414023
Fax No. : 0161-2400822
E-mail : ramneek@rediffmail.com, ramneek@gadvasu.in
Website : www.gadvasu.in

16. MAHARASHTRA ANIMAL & FISHERY SCIENCES UNIVERSITY, NAGPUR (10 SEATS) *

Maharashtra Animal & Fishery Sciences University, Nagpur offers programme in Animal Biotechnology and successful candidates are awarded M.V.Sc. degree in Animal Biotechnology. Candidates admitted to the programme are eligible for award of fellowship at the prescribed rate of Rs.8000/- per month under the Department of Biotechnology Human Resource Development Project.

Thrust area for teaching are cellular and Molecular Biology, Animal Genomics, Assisted Productive Biotechnology, Molecular Diagnostics, Vaccine Biotechnology, Animal Cell Biotechnology and Bioinformatics. Additionally students will undergo training with R& D organizations.

Major areas for thesis research include Molecular characterization of pathogens, Nucleic acid based and immuno-diagnostics, recombinant DNA technology, Assisted reproductive biotechnology and stem cell.

Department is well equipped and has many modern equipments including Real time PCR, PFGE and facility for bioinformatics. For more detail visit website www.mafsu.in

Fees to be Paid at the time of Admission: Dayscholar - Rs. 10700/- (Approx.) Hosteller - 14300/- (Approx.) excluding mess dues.

Contact Address: Dr. D. R. Kalorey
 Prof. & Course Coordinator (HRD)
 Department of Veterinary Microbiology &
 Animal Biotechnology T&RC
 Nagpur Veterinary College,
 MAFSU, Nagpur - 440006
 Phone No. : 0712-2510087
 Fax No. : 0712-2510883
 E-mail : dewanandkalorey@rediffmail.com

17. ASSAM AGRICULTURAL UNIVERSITY, GUWAHATI (5 SEATS) *

The DBT-supported **M.V.Sc. programme in Animal Biotechnology** was started from the year 2010 with an annual intake capacity of 10 students, out of which 5 seats are reserved for domiciles of North Eastern Region and those who studied at least for 3 years post HSLC in any of the northeastern states.

Besides imparting teaching, the college carries out field oriented researches in all disciplines of animal husbandry and veterinary, and also provides extension services to the farmers with the aim of technology transfer. A number of research projects funded by agencies like ICAR, NAIP, DBT, DST, World Bank, DRDO etc. are currently being implemented in different departments of the college.

- i. The college has a well-equipped library, which provides textbooks, journals and other periodicals to the students.
- ii. Regular students are required to stay in the hostels unless otherwise permitted by the concerned authority. At present, there are altogether 7 boys' and 3 girls' hostels in the college. The hostels are equipped with basic amenities and a student may require approximately Rs. 800.00 per month to meet the expenses on food in addition to the hostel rent etc.
- iii. The college also provides ample opportunities to the students to cultivate their talents in different fields of extra-curricular activities including sports. It also provides facilities for horse riding.
- iv. The college has a well-equipped Health Centre with adequate staff for providing 24-hour health care services to the students and other campus inmates.
- v. There is a separate Directorate of Students' Welfare to look after the students' welfare and amenities.
- vi. The college has its own Local Area Network with 24-hour 2 Mbps (1:1) Internet connectivity.

Fees to be Paid at the time of Admission: Dayscholar -Rs.25,200.00
 Hosteller - Rs.28,450.00 (excluding Mess dues)

Contact Address: Dr. Probodh Borah
 Coordinator, PG Programme in Animal
 Biotechnology and Professor,
 Department of Microbiology
 College of Veterinary Science
 Assam Agricultural University,
 Khanapara, Guwahati - 781022
 Phone No. : 0361-2334990
 Fax No. : 0361-2337700
 E-mail : cvsguwahati.btisnet@nic.in
borahp@vetbifquwahati.ernet.in

**18. SHER-E-KASHMIR UNIVERSITY OF AGRICULTURAL SCIENCES &
 TECHNOLOGY OF KASHMIR, SRINAGAR (05 SEATS) ***

Division of Biotechnology at S.K. University of Agricultural Sciences and Technology of Kashmir offers M.V.Sc. degree program in Animal Biotechnology of two year duration (Four Semesters). The degree program comprises of 40 credit hours of course work and 20 Credit hours of research work.

The Division has highly qualified faculty with international research experience, externally funded research programs, state of art laboratories viz Functional Genomics lab equipped with Real time PCR, DNA analysis lab., Cell/Embryo culture lab., Animal Cloning and Embryo transfer lab. With laparoscopy/USG units, Bio-informatics lab., Gene Cloning lab., etc. In addition adequate facilities for laboratory/experimental animals are available for the research scholars of the Division.

Thrust Areas of Research: Post Graduate research work covers investigations on livestock Genomics, Proteomics, Biotic/ Abiotic Stress tolerance in livestock, Bio-informatics application in Livestock research data analysis, Marker Assisted Selection for productive traits and disease resistance in livestock, Recombinant DNA technology, Reproductive Biotechnology, Embryo developmental studies, Cryobiology of germplasm and Animal Transgenesis.

Candidates admitted to the program are eligible for the award of studentship of Rs. 8000/- per month under HRD program of DBT, Govt of India.

Fees to be Paid at the time of Admission: Rs.12000/- (Boarders), Rs.9000/- (Non-Boarders)
Rs.2250/- (Refundable Security).

Contact Address: Prof. Nazir Ahmad Gani
Head, Division of Biotechnology &
Coordinator (DBT HRD programme)
Centre of Animal Biotechnology,
FVsc&AH,
S.K. University of Agricultural Science
and Technology of Kashmir
Shuhama, Alusteng-190006
Srinagar, J&K
Phone No. : 194-2262642
Fax No. : 194-2262642
E-mail : drnazirahmad@gmail.com
naganai@skuastkashmir.ac.in

* No. of seats is subject to revision by the participating Universities.

II. ELIGIBILITY FOR ADMISSION

Bachelor's degree under 10+2+3/4/5 pattern of education with at least 55% marks or its equivalent grade point average from any recognized university in the concerned subjects shown hereunder against each university:

1. **FOR ASSAM AGRICULTURAL UNIVERSITY, JORHAT:** B.Sc.(Agri.) from any recognized university.
2. **FOR BIDHAN CHANDRA KRISHI VISWAVIDYALAYA, WEST BENGAL:** Applicants must have passed 4 year Bachelor Degree in Agriculture/Horticulture from a duly recognized University securing at least 2.75 OGPA in 4.00 scale or 6.50 OGPA in 10.00 scale or at least 55% marks in aggregate.
3. **FOR CH. SARWAN KUMAR H.P. KRISHI VISHWAVIDYALAYA, PALAMPUR:** Agriculture, Horticulture or Forestry.
4. **FOR G.B. PANT UNIVERSITY OF AGRICULTURE & TECHNOLOGY, PANT NAGAR:** Agriculture, Veterinary Sciences, Horticulture or Forestry. Students from Bachelor of Science (B.Sc. in ZBC/PCM and B.Sc.(Biotechnology)) are also eligible.
5. **FOR INDIRA GANDHI KRISHI VISHWAVIDYALAYA, RAIPUR:** Agriculture, Biotechnology (Agriculture), Horticulture or Forestry with Bachelor's Degree under 10+2+4 pattern with at least 60% marks or equivalent OGPA.
6. **FOR KERALA AGRICULTURAL UNIVERSITY, THRISSUR:** Agriculture, Horticulture, or Forestry.
7. **FOR VASANTRAO NAIK MARATHWADAKRISHI VIDYAPEETH, LATUR (MAHARASHTRA):** Agriculture, Horticulture or Forestry.
8. **FOR ORISSA UNIVERSITY OF AGRICULTURE & TECHNOLOGY, BHUBANESWAR:** Agriculture, Horticulture, Forestry or Sericulture.
9. **FOR TAMIL NADU AGRICULTURAL UNIVERSITY, COIMBATORE:** Agriculture, Horticulture, Forestry or B. Tech (Biotech), B. Tech (Horticulture).
10. **FOR UNIVERSITY OF AGRICULTURAL SCIENCES, G.K.V.K., BANGALORE:** Agriculture, Horticulture, Forestry or Sericulture.
11. **FOR UNIVERSITY OF AGRICULTURAL SCIENCES, DHARWAD:** Bachelors degree in Agriculture, Horticulture, Forestry, B. Sc. (Agril. Biotechnology)/B. Tech (Biotechnology)/B.Sc. (Ag. Biotech.)/B. Sc. (Agri) in Biotechnology from recognized Agricultural/Horticultural/Forestry universities.
12. **FOR RAJENDRA AGRICULTURAL UNIVERSITY, BIHAR, PUSA (SAMASTIPUR):** Biotechnology/Agricultural Horticulture. Candidates with Bachelor Degree in Biology (3 Years duration) will have to spend 3 years in M.Sc. programme.
13. **FOR LALA LAJPAT RAI UNIVERSITY OF VETERINARY AND ANIMAL SCIENCES, HISAR:** Veterinary Sciences and Animal Husbandry (B.V.Sc & A.H.) recognized by Veterinary Council of India with minimum OGPA 6.5/10.00 or equivalent.
14. **FOR NANAJI DESHMUKHPASHU CHIKITSA VIGYAN VISHWAVIDYALAYA, JABALPUR:** Veterinary Science and Animal Husbandry (B.V.Sc. & A.H.) recognized by Veterinary Council of India with minimum OGPA/Percentage of marks 6.00/10.00 or equivalent for general category candidates and 5.50/10.00 or equivalent for SC/ST/PH category.
15. **FOR GURU ANGAD DEV VETERINARY AND ANIMAL SCIENCES UNIVERSITY, LUDHIANA:** B.V.Sc & A.H./B.V.Sc. or B.Sc. (Biotechnology/ Agricultural Biotechnology/ Medical) or B.Sc. (Hons.) Biotechnology/Biochemistry/Microbiology/

Molecular Genetics or equivalent degree with minimum OCPA of 6.00 (out of 10.00) or at least 60% marks in aggregate. Candidates admitted to Master's programme in Animal Biotechnology with basic qualifications other than B.V.Sc. & A.H. degree shall get M.Sc. degree in Animal Biotechnology.

16. **FOR NAGPUR VETERINARY COLLEGE, MAFSU, NAGPUR :** Bachelor's Degree of Veterinary Science and Animal Husbandry (B.V.Sc. & A.H.) recognized by veterinary Council of india, New Delhi with 6.00 & 5.50 CGPA in 10.00 point scale for unreserved & reserved category candidate respectively.
17. **FOR ASSAM AGRICULTURAL UNIVERSITY, GUWAHATI :** B.V.Sc. & A.H. or equivalent degree from a recognized university with minimum CGPA 2.60 in 4.00 scale or 6.00 in 10.00 scale.
18. **FOR SHER-E-KASHMIR UNIVERSITY OF AGRICULTURAL SCIENCES & TECHNOLOGY OF KASHMIR, SRINAGAR:** Candidates possessing Bachelors degree in Veterinary and Animal Sciences (B.V.Sc. & A.H.) recognised by Veterinary Council of India with minimum OGPA 6.00/10.00 or equivalent are eligible.

Only those candidates who have passed the qualifying examination in 2012 or thereafter including those who are appearing in 2014 are eligible to apply. In other words, those who have passed the qualifying examination PRIOR to 2012 are not eligible to apply for taking admission.

IMPORTANT NOTES: Before applying please ensure that you fulfil the eligibility requirements as prescribed by various Universities. Also please note that permission to appear in the entrance examination is subject to your fulfilling the minimum eligibility requirements prescribed for admission to the concerned programme. You may, therefore, appear in the entrance examination only if you fulfil the eligibility requirements for the programme for which you are seeking admission. 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. RESERVATION/CONCESSION

- a) **Reservation:** 15%, 7% and 3% of seats shall be reserved for Scheduled Caste (SC), Scheduled Tribe (ST) and Physically Challenged (Handicapped) (PH) candidates (with not less than 40% disability) 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 unless otherwise specifically mentioned by any participating University (Refer Eligibility for Admission Chapter II). **Only those SC/ST/PH candidates who have passed the qualifying examinations in 2012 or thereafter including those who are appearing in 2014, are eligible to apply. In other words, those who have passed the qualifying examination PRIOR to 2012 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 along with 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.

IV. SYLLABUS

1. Agricultural Biochemistry - Isomerism, hydrogen bond and hydrophobic interaction in biomolecules; chemistry of biomolecules-carbohydrates, amino acids, proteins, lipids and nucleic. Metabolism of carbohydrates, fatty acids and protein. Genetic code, replication, transcription and translation. Enzymes and their kinetics, factors affecting enzyme activity. Competitive- and non-competitive inhibitions. Coenzymes and cofactors. Plant pigments.
2. Animal Husbandry and Veterinary Science- Importance of livestock in agriculture; relationship between plant and animal husbandry; mixed farming; animal breeding; breeds of indigenous and exotic cattle, buffaloes, goats, sheep, pigs and poultry and their potential for milk, egg, meat and wool production; classification of feed and fodder; major contagious diseases affecting cattle and drought animals, poultry and pigs; reproduction biology of cattle; artificial insemination, fertility and sterility; principles of immunization and vaccination; description, symptoms, diagnosis and treatment of major contagious diseases; drugs used for killing, tranquillizing and doping farm and wild animals; study of milk composition; physical properties and food value of milk; quality control of milk, tests and legal standards; dairy equipments and their cleaning; organization of dairy, milk processing and distribution; microorganism found in dairy and milk products; pregnancy and distochea.
3. Cell Biology - Modern tools and techniques in the study of cytology; prokaryotic and eukaryotic cells-structural and ultrastructural details; functions of organelles including membrane; cell cycle, mitosis and meiosis; numerical structural variation in chromosomes and their significance.

4. Protection - Diseases of field, vegetable, orchard and plantation crops of India and their control; causes and classification of plant diseases; principles of plant disease control biological control of diseases; Seed health testing, Integrated pest management-concepts and components; host plant resistance-biological control of insect pests; genetic manipulation of insects for their control; pesticides, their formulation, classification and safe use; behavioural methods; use of computer modeling in pest and disease out break; use of semiochemicals in IPM; insect growth regulators; biotechnological approaches in IPM; IPM in major crops, Principles of nematode management-integrated nematode management in major crops-silkworm types; mulberry silkworm, culturing methods; pests and diseases of mulberry and mulberry silkworm and their management.
5. Cropping Systems and Crop Management - Impact of the high yielding and short duration varieties on shifts in cropping patterns; concepts of multiple cropping, relay cropping and inter-cropping and their importance in relation to food production crop production practices for important cereals, pulses, oilseeds, fibre, sugar and cash crops; crop weed, their characteristics, cultural biological and chemical weed control; remote sensing and agriculture.
6. Ecology and Environment - Ecology and its relevance to man; natural resources their management and conservation- Climatic elements as factors of crop growth- impact of changing environment on cropping pattern- change in environment due to agriculture-environmental pollution and associated hazards to crops, animals and humans-liquid and solid waste disposal- Pollution prevention and remediation.
7. Principles of Food Science and Processing - Food production and consumption trends in India; food Science objective food composition; nutritive value of foods; importance and scope of food processing; Indian scenario; Effect of processing on different food groups; Food spoilage; Principles and methods of preservation; Quality Standards, Ventra Centicals.
8. Genetics and Plant Breeding -Earlier concepts of heredity; Mendel's work and laws of heredity; Chromosomal theory of inheritance; Gene interactions; Multiple alleles; Multiple factor hypothesis; Linkage and crossing over; Linkage analysis; Construction of genetic map; Sex determination; Sex linked; sex influenced and sex limited traits; Spontaneous and induced mutations; Centre of origin; Domestication of crop plants; Conservations and utilization of genetic resources; Reproductive and pollination mechanisms in plants; Methods and principles in plant breeding; Methods of breeding self-pollinated crops; Methods of breeding cross- pollinated crops; Methods of breeding asexually propagated crops; self incompatibility and male sterility in crop breeding; mutation breeding in crop improvement; Ploidy breeding in crop improvement; Innovative breeding methods in crop improvement.
9. Horticulture and Forestry - Climatic requirements and cultivation of major fruits, flowers and vegetable crops spice in plantation crops, the package of practices and the scientific basis for the same; handling and marketing of fruit and vegetables; preservation of fruits and vegetables; fruit and vegetable in human nutrition; landscaping and floriculture; ornamental plants and design and lay out of lawns and gardens; tissue culture and micropropagation of important fruit, vegetable and ornamental plants including major spices and plantation crops, important features, scope and propagation of various types of forestry plantations, such as, extension/social forestry, agroforestry and the management of natural forests.
10. Agricultural Microbiology - Spontaneous generation theory-Grem theory-Discovery of antibiotics-Types of Microscopes-Principles and equipment of different kinds of sterilisation-staining Techniques-Nutritional types of bacteria-Growth curve-Factors influencing bacterial growth-Fermentation: Principle and Application-Classification of Bacteria-Gene transfer methods in microorganisms Antigen and antibody reaction. Contributions of Beijerinck and Winogradsky-Role of microbes in carbon and nitrogen cycles-Influence of Rhizosphere on soil microorganism-Variou types of nitrogen fixing microorganism-Production of bacterial biofertilizers: Rhizobium, Azospirillum, Phosphobacteria etc.- Fungal biofertilizers; Ecto- and Endomychorizae- Azolla and BGA- Method of application for different biofertilizers.
11. Plant Physiology - Plant physiology and its significance in agriculture; physical properties and chemical constitution of protoplasm; plant cell water relation - imbibition, surface tension, diffusion, osmosis; absorption and translocation of water and nutrients; transpiration, guttation, mineral deficiencies and their symptoms;physiological disorders, correction hydroponics, foliar nutritions aerobic and anaerobic respiration; Photo respiration Factors affecting respiration and Photo- respiration. Photosynthesis- modern concept and the factors affecting photosynthesis, nitrogen fixation growth development and differentiation; growth hormones, growth retardants, growth inhibitors and their use in agriculture; tropism in plants photoperiodism and vernalization; seed dormancy and germination; fruit ripening process and its control.
12. Seed Technology - Seed technology and its importance; production processing and testing of seeds of crop plants; seed storage, seed certification; role of NSC in production; New seed policy and seed control order, Terminator Technology.
13. Soil Science and Agricultural Chemistry - Soil as a medium of plant growth and its composition; mineral and organic constituents of soil and their role in crop production; chemical physical and microbiological properties of soil; essential plant nutrients, their functions occurrence and recycling; micro-secondary and micro nutrient sources and their management; integrated nutrient management, soil water relationship, principles of soil fertility and its evaluation for judicious use of fertilizers; organic manure and biofertilizers; soil conservation planning on water shed basis; erosion and run -off management in hilly, foot hills and valley lands; processes and factors affecting soil erosion; dryland agriculture and its problems; rainfed agriculture.

14. Biostatistics - Compilation, classification, tabulation and diagrammatic representation of data; measures of central tendency, correlation and regression involving two variables; concept of random sampling; tests of significance testing of hypothesis; statistical tests two kinds of error; chi-square test; principles of sampling; sampling and sampling errors; analysis of variance transformations to stabilize variance; principles of experimental design, randomized block design; latin square design; factorial experiments; missing plot techniques. Introduction to computer-Electronic data processing, operating system-common software available-Internet applications-Databases and bioinformatics.
15. Agricultural Biotechnology - Concepts and scope of biotechnology. Tissue culture and its application, Micropropagation. Meristem culture and production of virus-free plants. Anther and microspore culture. Embryo and ovary culture. Protoplast isolation. Protoplast fusion-somatic hybrids, cybrids. Somaclones. Synthetic seeds. In vitro germplasm conservation. Cryopreservation. Organelle DNA, Satellite and repetitive DNAs. DNA repair. Regulation of gene expression. Recombinant DNA technology-cloning vectors, restriction enzymes, gene cloning. Methods of gene transfer in plants. Achievements and recent developments of genetic engineering in agriculture. Development of transgenics for biotic & abiotic stress tolerance, Ribozyme Technology microarray, bioethics, terminator technology, nanotechnology, DNA finger printing, gene silencing.

V. GUIDELINES FOR ENTRANCE EXAMINATION

The question paper for entrance examination will be of three hours duration and will consist of two parts, PART-A and PART - B.

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 x1 mark each) of 60 marks. There will be negative marking and for each wrong answer, 1/2 (half) mark will be deducted.

PART- B will also have multiple choice questions from the syllabus detailed above in Section IV of this Brochure. There will be 100 questions out of which the candidates will have to attempt 60 questions. Each correct answer will have a weightage of 3 marks. There will be negative marking and for each wrong answer one mark will be deducted.

VI. PREVIOUS YEARS' QUESTION PAPERS

For the reference of intending candidates, a set of question papers pertaining to the last three years are available on JNU website www.jnu.ac.in

VII . SELECTION PROCEDURE

The selection will depend strictly on the inter-se merit of the candidate in the Entrance Examination vis-à-vis preferences for joining the Universities indicated by the candidate. **In case a candidate has not indicated his/her choice for joining a particular University, his/her name will not be considered for that University.**

The Selection procedure will be as follows:

- 1) After the merit list is drawn more than 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 options 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 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 SECOND WEEK OF JUNE.**
- 2) Before exercise the options candidates are advised to check their eligibility as prescribed by different University and ensure that they fulfil the prescribed eligibility.
- 3.a) 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.b) Candidates who don not fulfil the eligibility for any University would not be considered for admission to that University/ Universities.
- 4) 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. **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.**

- 5) 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 concerned University for refund to the students after first semester.
- 6) 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 first semester then in that event, the initial security deposit of Rs. 5,000/- or Rs.2,500/- in case of SC,ST, PH categories, as the case may be, will stand forfeited.
- 7) The initial security deposit of Rs.5,000/-, (Rs.2,500/- in the case of SC/ST, PH category candidates) will be refunded in full to those of the candidates who are not offered admission to any of the participating university.
- 8) **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.**
- 9) Only those candidates who will be asked to exercise their option, the list/letter of these candidates will be available on JNU website (www.jnu.ac.in) although intimation to this effect is also sent to the candidates on their e-mail account. 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 issue any paper intimation to the candidates. Candidates are advised to regularly check JNU website for updates.**
- 10) **PLEASE NOTE THAT ONLY ONE MERIT LIST WILL BE RELEASED AND THERE WILL BE NO SECOND LIST UNDER ANY CIRCUMSTANCES.**

VIII. ADMIT CARD FOR ENTRANCE EXAMINATION

The candidates may download their Admit Card from the University's website: www.jnu.ac.in around 10th May 2014 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 by each University for M.Sc. (Agri.) or M.V. 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.

Those candidates who have applied and fulfil the prescribed eligibility conditions but somehow 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.**

IX. TIME-TABLE FOR ENTRANCE EXAMINATION

- | | |
|---|--|
| 1. Start of Online Application process | From 10.00 a.m. on 7th February, 2014 |
| 2. Issue of offline Application Forms (by Post) | 7th February, 2014 |
| 3. Last date for issue of offline Application Forms (by Post) | 11th March, 2014 |
| 4. Closing of online Application Process | till 5.00 p.m. 26th March, 2014 |
| 5. Last date of submission of completed Application Form to reach JNU | |
| i) Offline Application Forms | 28th March, 2014 |
| ii) Printed copy of online Application Form | 2nd April, 2014 |
| 6. Date and time of Entrance Examination | May 19, 2014
(2.00 P.M. to 5.00 P.M.) |

7. **Results of Entrance Examination**
 i. Merit list of candidates to exercise their option for Universities 2nd/3rd week of June, 2014
 ii. Final result of allotted Universities last week of June/1st week of July, 2014
8. **For admission/result queries candidate may visit our website** www.jnu.ac.in

Although the University will inform the candidates falling under consideration zone about their merit in CEEB on their e-mail account, it is the responsibility of the candidate to see the result on University website. The list/letter of these candidates will also be available on JNU website (www.jnu.ac.in). The University will not issue any paper intimation to the candidates. Candidates are advised to regularly check JNU website for updates.

X. 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.

XI. CERTIFICATES AND OTHER DOCUMENTS REQUIRED AT THE TIME OF 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 that the disability is not less than 40%.
- (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.

XII. INSTRUCTIONS FOR COMPLETING THE APPLICATION FORM

Notes:

- a) Please read the Check List given in the inside front cover of the brochure before 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.

- 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.
- 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.
- Gender:** Darken the appropriate bubble.
- Nationality:** Darken the appropriate bubble. In case you are a Foreign National, please indicate the country to which you belong in the space provided.
- 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) as per Central list	O B C

- 5(a). If you belong to Minority Community, darken the bubble, otherwise leave it blank.
6. **PH Category:** In case you are a candidate with a minimum of 40% disability, darken the bubble corresponding to your Physical Handicapped category as given below. Otherwise leave it blank.
- | | | |
|-----------------------------|---|----|
| Hearing Handicapped | : | HH |
| Orthopadeically Handicapped | : | OH |
| Visually Handicapped | : | VH |
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	Madhya Pradesh	1 9
Assam	0 2	Maharashtra	2 0
Andhra Pradesh	0 3	Manipur	2 1
Arunachal Pradesh	0 4	Meghalaya	2 2
Bihar	0 5	Mizoram	2 3
Chandigrah	0 6	Nagaland	2 4
Chattisgarh	0 7	Orissa	2 5
Delhi	0 8	Pondicherry	2 6
Daman & Diu	0 9	Punjab	2 7
Goa	1 0	Rajasthan	2 8
Gujarat	1 1	Sikkim	2 9
Haryana	1 2	Tamil Nadu	3 0
Himachal Pradesh	1 3	Tripura	3 1
Jammu & Kashmir	1 4	Uttar Pradesh	3 2
Jharkhand	1 5	Uttaranchal	3 3
Karnataka	1 6	West Bengal	3 4
Kerala	1 7	Any other place(in India)	3 5
Lakshadweep	1 8	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	28. Katihar	1028
2. Ahmedabad	1002	29. Kolkata	1029
3. Aizawl	1003	30. Lucknow	1030
4. Allahabad	1004	31. Mumbai	1031
5. Amritsar	1005	32. Madurai	1032
6. Bangalore	1006	33. Nagpur	1033
7. Bareilly	1007	34. Noida	1034
8. Bhubaneshwar	1008	35. Pant Nagar	1035
9. Calicut	1009	36. Patna	1036
10. Chandigarh	1010	37. Pondicherry	1037
11. Chennai	1011	38. Pune	1038
12. Coimbatore	1012	39. Raipur	1039
13. Dehradun	1013	40. Ranchi	1040
14. Delhi	1014	41. Sambalpur.	1041
15. Dimapur	1015	42. Shillong	1042
16. Gangtok	1016	43. Shimla	1043
17. Gwalior	1017	44. Silchar	1044
18. Guwahati	1018	45. Siliguri	1045
19. Goa	1019	46. Srinagar	1046
20. Gorakhpur	1020	47. Thiruvananthapuram	1047
21. Hyderabad	1021	48. Udaipur	1048
22. Secundrabad	1022	49. Varanasi	1049
23. Imphal	1023	50. Vijayawada	1050
24. Indore	1024	51. Visakhapatnam	1051
25. Itanagar	1025	(Overseas Centre)	
26. Jaipur	1026	52. Kathmandu*	2000
27. Jammu	1027		

* Subject to sufficient number of candidates available.

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) around 10th May, 2014.**
- 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 and Physically Challenged (Handicapped) categories. The entrance examination fee for Foreign Nationals is US\$ 25.00 or Rs.1550/-.
- You are required to enclose Crossed Bank Draft 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 towards entrance examination fee is not submitted with the application form, your application will be summarily rejected without any intimation to you).**
- Please note that Column No. 14. (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 firmly affix (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 photograh 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.

17. **Father's/Guardian's Name**: Write your father's/Guardian's name in BLOCK LETTERS exactly as in your 10th class or equivalent Certificate. Write only one letter in each box.
18. **Mother's Name** : Write your Mother's name in BLOCK LETTERS exactly as in your 10th class or equivalent Certificate. Write only one letter in each box.
19. **Mobile Number**: Darken the bubbles corresponding to the appropriate numerals to indicate your mobile number.
20. **Permanent Address** : Write your complete permanent address in CAPITAL LETTERS, including Pin Code.
21. **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. (Agricultural/Horticulture/Forestry) B.Sc. (Hons.), B.Sc., B.Tech., 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/Mobile No./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.
- **Insert the following documents in the 10" X 7" size envelope supplied with the Application Form and post it to the University by Registered Post/Speed Post.**
 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).

Application Forms can be submitted only by Registered Post/Speed Post to Section Officer (Admissions), Room No.28, Administrative Block, Jawaharlal Nehru University, New Delhi - 110067. The completed Application Form must reach JNU latest by (i) offline Application Form by 28th March, 2014 and (ii) printed copy of the online Application Form by 2nd April, 2014. 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 OR ANY OTHER POSTAL MODE EXCEPT REGISTERED POST/SPEED POST

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.

17. Father's Name/Guardian's Name (IN BLOCK LETTERS)

ANIL KUMAR MISHRA

18. Mother's Name (IN BLOCK LETTERS)

SUMITA MISHRA

19. MOBILE NUMBER

9891640841

*20. Permanent Address : PAYAL MISHRA

D/O ANIL KUMAR MISHRA

516, ADARSH NAGAR, KAUSHAMBI,

District: GHAZIABAD

State: UTTAR PRADESH

Country: INDIA

PIN Code: 201012

21. Academic Record: Take into account marks in those subjects which are counted for awarding classification.

Examination Passed	Year of Passing and Division	% of Marks CGPA or Grade	Duration of Course (Years)	Name of School/College/Institution and District in which studied	Name of Board/University	Subject/Papers Offered
* High School/Intermediate/10th Class	2006	60	2	KVIC-GHAZIABAD	U.P. BOARD	HND, ENG, SET, MATH, SOC. SCI
* Senior School Certificate (10+2) Intermediate or equivalent	2008	58	2	KVIC-GHAZIABAD	U.P. BOARD	HND, ENG, PHT, CHEM, BIOLOGY
B.Sc. (Hons.) B.Sc. (B.Sc. (Agr.) / S.Tech./B.E. / B.Vec./M.S.B.S. or B.D.S. / Any other Graduate Degree)	2013	81	5	MGVU BHARAT PUR RAJASTHAN RAU - BIKANER	RAU (RAJUVAS) BIKANER	All Vety. Subject
* Masters Degree						
Aggregate of all years						
Any other examination / Exam specify						

* Strike off the Name of Examination which is not applicable.

Are you a student of any University at present. If yes, give details :

NO

(Name of the University & Course of Study)

DECLARATION BY THE APPLICANT : I declare that nothing is concealed and 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.

Signature of the Applicant

Date 12.02.2014

Telephone No. with STD Code 0120-2842139

Fax No.

Place GHAZIABAD

Mobile No. 9891640841

E-mail mishra.payal88@gmail.com

Pf. No. 264
Last Date for Submission
25th March 2014

Application Form for Combined Entrance Examination for Biotechnology Programmes -2014-15 (CEEB)

502-1

Fields with * Mark are Mandatory.

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

PAYAL MISHRA

APPLICATION FORM INCOMPLETE IN ANY RESPECT SHALL NOT BE CONSIDERED.

Wrong Methods

Correct Method

Application No.

2. Date of Birth

Day	Month	Year
12	08	2008

<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>5 (a) Minority Community <input type="radio"/></p>	<p>6. PH. CATEGORY</p> <p>HH <input type="radio"/></p> <p>OH <input type="radio"/></p> <p>VH <input type="radio"/></p> <p>7. Keenish Migrant <input type="radio"/></p>	<p>8. STATE OF DOMICILE</p> <p>32</p>	<p>9. Programme for Study (Mark only one bubble)</p> <p>M.Sc. Biotechnology (BIT) <input type="radio"/></p> <p>M.Sc. (Agri) Biotechnology (BAG) <input type="radio"/></p> <p>M. V. Sc. (MVS) <input checked="" 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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FOLD ALONG THIS LINE

<p>11. Year in which qualifying exam passed/received</p> <p>2013</p>	<p>12. Entrance Exam Centre Code</p> <p>1014</p>	<p>13. Details of Bank Draft enclosed towards Entrance Examination Fee</p> <p>DD NUMBER: 050193</p> <p>DATE OF DEMAND DRAFT: 10/02/14</p> <p>AMOUNT: 0600</p>
--	--	---

FOLD ALONG THIS LINE

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

NAME: PAYAL MISHRA

ADDRESS: D/10 ANIL KUMAR MISHRA
516, ADARSH NAGAR
KAUSHAMBI, GHAZIABAD
(U.P.)

PIN CODE: 201012

15. PHOTOGRAPH

FIRMLY AFFIX YOUR COLOUR PHOTOGRAPH OF GOOD QUALITY TAKEN ON OR AFTER JAN. 1, 2014

DO NOT STAPLE (SIZE 3.5 CM X 4.5 CM)

(Do not get the Photograph attested.)

Application No.

16. SIGNATURE (WITHIN BOX) IN RUNNING HAND, USING BLACK BALL POINT PEN ONLY

Payal Mishra

JAWAHARLAL NEHRU UNIVERSITY EXAMINATION CENTRES FOR ENTRANCE EXAMINATION 2014-15

