

**Combined Entrance Examination
conducted by
Jawaharlal Nehru University
for admission to
M.Sc.(Agri.) Biotechnology & M.V.Sc.
Programmes of Study**

www.jnu.ac.in

PROSPECTUS

**ACADEMIC SESSION
2016-17**

Check List

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- ☞ **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;
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- ☞ You have signed the application form in the space marked for signature.
- ☞ **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. 1000/-
SC/ST/PWD Category Candidates (PWD includes OH, VH and HH)	Rs. 500/-
Foreign Nationals	US\$ 40.00 or Rs.2640/-

- ☞ **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 offline Application Form must reach JNU latest by 23rd March, 2016. 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

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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 Krishi Viswavidyalaya, Raipur;
6. Kerala Agricultural University, Thrissur;
7. Vasant Rao 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, 2016, 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 Biotechnology, Govt of India, has been conferring M.Sc.(Agri) degree in Biotechnology ever since its inception. From 2010-11 the department also offers Ph.D. degree to students with both Agricultural and non-Agricultural sciences background. The Department has 15 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 equipment.

Several competitive research grants from national agencies like DBT, ICAR, DST, UGC etc. and international agencies such as Kirkhouse Trust, UK are currently running in 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, Dharwad 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.8240.00/- + Rs.5200.00 (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)

Fax No. : 0376-2340001, 2340101, 2340095

E-mail : mkmodi@aau.ac.in

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

The Bidhan Chandra Krishi Viswavidyalaya, a State-aided university established in 1974, has completed four decades of its existence as a pioneer institute of Agricultural Education, Research and Extension. The main objective of this Viswavidyalaya is to provide facilities for the study of Agriculture, Horticulture and Agricultural Engineering. There is a full fledged department of Agricultural Biotechnology under the aegis of Faculty of Agriculture, offering M.Sc (Ag.) in Agricultural Biotechnology and Ph.D in Agricultural Biotechnology courses. The four semester master degree programme is supported by DBT, Govt. of India, and all the students are eligible to get studentship.

The thrust areas of teaching and research are molecular biology, molecular breeding, molecular diagnostics, recombinant DNA technology, plant tissue culture & genetic transformation, genomics & proteomics, bioinformatics etc. The Department of Agricultural Biotechnology has active interaction for research with a number of national and international institutes, and faculty members are actively engaged in various research projects funded externally. The University is in the process of establishing a Regional Nuclear Agriculture Research Centre in collaboration with the Board of Research on Nuclear Science which will help to reap a rich harvest in teaching and research of biotechnology. For more details about the university, visit www.bckv.edu.in

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

Contact Address: Dr. N Mandal,
Professor & Head,
Department of Agricultural Biotechnology
& Course Coordinator, M.Sc. (Agri.) Biotechnology Teaching Programme
Faculty of Agriculture,
Bidhan Chandra Krishi Viswavidyalaya,
PO: Krishi Viswavidyalaya
P.S. Haringhata, Mohanpur
Dist. Nadia, West Bengal-741252
Phone No. : 09432420086
E-mail : nirman_bckv05@yahoo.com

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

Ch. Sarwan Kumar H.P. Krishi Vishvavidyalaya, 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 award of studentship of Rs. 4500/- per month. Candidates having B.Sc. (Agriculture)/B.Sc. (Horticulture)/B.Sc. (Ag. Biotechnology) are eligible for M.Sc. (Agri Biotech) programme.

The thrust area of thesis 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/- (non-Hosteller) & Rs.32000/- (Hosteller) Approx.

Contact Address: Dr. T. R. Sharma
Professor & Head
Department of Agricultural Biotechnology,
CSK Himachal Pradesh Krishi Vishvavidyalaya,
Palampur - 176062 Kangra (HP)
Phone No. : 01894-230314
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E-mail : trsharma88@gmail.com ,
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 (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 has been twice adjudged as 'A' rank by Department of Biotechnology (Govt. of India, 2011, 2015) 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 the 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 is 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, Immunodiagonstics for plant and animal disease surveillance and Embryo Transfer Technology, Nanotechnology.

Fees to be paid at the time of Admission: Rs.34,488/- (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 Plant Molecular Biology & 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,
Krishak Nagar,
Raipur -492006
Chhattisgarh
Phone No. : 0771-2971520
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 M.Sc. 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, Immunology and 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, Nanobiotechnology 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. Considering the accomplishments, Kerala state has recognized CPBMB as centre of excellence in Agricultural Biotechnology.

The centre has active interaction and collaboration in 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.15,906/- + Rs.15,829/- (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 principles 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.22,556/- (approx.)

Contact Address: Dr. K. R. Kamble
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 : vdcoablatur@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.23,600/- (Approx)

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

9. TAMIL NADU AGRICULTURAL UNIVERSITY, COIMBATORE (20 seats) *

Students are awarded M.Sc. (Ag) 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, plant tissue culture, genetic engineering and bioinformatics. The minor courses viz., plant physiology, plant biochemistry and applied concept of crop breeding are added to the major courses in the programme. Supporting courses viz., statistical methods, design of experiments and computer applications are also provided to the students to get needed knowledge in related fields. Six compulsory non -credit courses viz., (i) Library and information services, (ii) Technical writing and communications skills, (iii) Intellectual property and its management in Agriculture, (iv) Basic concepts in laboratory techniques, (v) Agricultural research, research ethics and rural development Programs, and (vi) Disaster management will also be taught. Submission of dissertation based on research carried out by the student is also a part of the degree programme.

All the students selected through JNU entrance examination are eligible to get a studentship of Rs.4, 500/- per month.

Fees to be paid at the time of Admission: Tuition fee : Rs.22580/- (approx.) including caution deposit.
Hostel fees Rs.9700/-(approx) including hostel deposit

Contact Address: Dr. R. Chandrababu,
Director
Centre for Plant Molecular Biology & Biotechnology,
Tamil Nadu Agricultural University,
Coimbatore - 641003
Tamil Nadu
Phone No. : 0422-6611262
Mobile No. : 09994437780
Fax No. : 0422-2431672
E-mail : directorcpmb@tnau.ac.in

10. UNIVERSITY OF AGRICULTURAL SCIENCES, G.K.V.K., BANGALORE, KARNATAKA (10 Seats)*
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A Bachelor's degree in Agriculture / Horticulture / Forestry / Sericulture / Agriculture Biotechnology from any Agricultural / Horticulture and Deemed universities recognized by ICAR in terms of course duration of Four years with a minimum OGPA of 6.50 / 10 or its equivalent. In case of candidates belongs to SC/ST/Cat-I a mere pass in bachelor degree is adequate. Candidate should possess good moral character and conduct. 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 & 2012, initiated several research programmes 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, Fuel Biotechnology and Bioinformatics. The University is successful in attracting competitive grants for time bound projects from central and state governments. The students need to do a thesis research project as part of the master's programme.

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

Fees to be paid at the time of Admission: Rs. 25940/- (College fee) +
Rs. 17000/- (Hostel deposit) for all students
(10% enhancement during 2016-17).

Contact Address: Dr. K. M. Harinikumar,
Professor & Coordinator
Department of Plant Biotechnology,
Kempegowda International Airport Road,
Near Yelakanka,
University of Agricultural Sciences,
Gandhi Krishi Vignana Kendra,
Bengaluru – 560065
Phone No. : 080-23330153 EXTN.276
FAXNO. : 080-23330277
E-mail : harinikumarm@gmail.com
harinikm@rediffmail.com

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

	1st Year		2nd Year	
	GM	20000	7000	16000
SC/ST	6850	1900	3290	1900
Cat-I	8750	1900	3690	1900

(Fees is likely to be increased by 20% during 2015-16)

Contact Address: Dr. A. R. Alagawadi
Professor and Head
Department of Biotechnology
University of Agricultural Sciences,
Krishinagar, Dharwad - 580005
Phone No. : 0836- 2747627
Fax No. : 0836-2747627
E-mail : hodbthacd@uasd.in

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

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

The major thrust areas in teaching and research are Tissue Culture/Cell Biology/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.

All the students admitted through JNU test are eligible to get studentship as per DBT-HRD norms.

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

Contact Address: Prof. V K Shahi,
Coordinator & Chairman
Department of Agricultural Biotechnology & Molecular Biology
Faculty of Basic Science and Humanities,
Rajendera Agricultural University,
Pusa, Samastipur
Bihar - 848125
Phone No. : 06274-240272
Fax No. : 06274-240272
E-mail : chairmanabmb2013@gmail.com
deanfbshpusa@yahoo.co.in

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, Reproductive Biotechnology, 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.40320/-

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,
Hissar - 125004, Haryana

Phone No. : 01662-256130 (O), 09896588704 (M)
 Fax No. : 01662-284312
 E-mail : manoharsangwan@gmail.com
mlsangwan@llruvas.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.24570/- (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.60000/- ; Boarder Rs.64000/- approximately (includes Rs.14000/- 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 : ramneekv@rediffmail.com, ramneek@gadvasu.in
 Website : www.gadvasu.in

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

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

The main thrust areas for teaching are Cellular and Molecular Biology, Animal Genomics, Assisted Reproductive Biotechnology, Molecular Diagnostics, Vaccine Biotechnology, Animal Cell Biotechnology and Bioinformatics.

Major areas for thesis research include molecular characterization and phylogenetic analysis of bacterial and viral pathogens, pathogen-host interactions, nucleic acid based and immuno diagnostics, recombinant DNA technology, assisted reproductive biotechnology and small RNA biology (siRNA/miRNA).

The department is well equipped with modern equipments including Real time PCR, PFGE and facility for bioinformatics as well as trained and experienced faculty of international repute to supervise post graduate teaching and research. For more details university website www.mafsu.in can be visited.

Fees to be Paid at the time of Admission: Dayscholar - Rs. 17800/- (Approx.) Hosteller - 29000/- (Approx.) excluding mess dues.

Contact Address: Dr. V.C. Ingle
 Associate Professor & Head and Course Coordinator (HRD)
 Department of Veterinary Microbiology and Animal Biotechnology
 Maharashtra Animal and Fishery Sciences University,
 Nagpur - 440001
 Phone No. : 0712-2510087
 Fax No. : 0712-2510883
 E-mail : vkingle@rediffmail.com

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

The College of Veterinary Science, Assam Agricultural University is one of the premier institutions in the North Eastern Region of India established in the year 1948. The DBT-supported M.V.Sc. programme in Animal Biotechnology was started in the college from the year 2010 and subsequently Ph.D. programme was also started since 2013. Both these courses are being offered by the Department of Animal Biotechnology, which also hosts the DBT-supported State Level Biotech Hub for the State of Assam. A number of research projects funded by national funding agencies are being implemented in the department.

The thrust areas of research in Animal Biotechnology include molecular characterization of animal pathogens, development of molecular diagnostics and recombinant vaccines for infectious diseases including zoonoses, livestock genomics and molecular fingerprinting of indigenous livestock, in-vitro fertilization and embryo transfer, cloning and micromanipulation of embryo, etc.

The department has state-of-the-art infrastructure equipped with latest modern instruments including a DBT-supported Bioinformatics Centre as well as highly qualified, motivated faculty to teach and guide the students.

Fees to be Paid at the time of Admission: Dayscholar -Rs.8,480.00
 Hosteller - Rs.13,680.00 (excluding Mess dues)

Contact Address: Dr. Probodh Borah
 Professor & Head
 Department of Animal Biotechnology
 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@vetbifguwahati.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.18987- (Boarders), Rs.11487/- (Non-Boarders)

Contact Address: Dr, Riaz Ahmad Shah,
 Professor and Head,
 Division of Biotechnology &
 Coordinator (DBT HRD programme)
 Faculty of Veterinary Sciences & Animal Husbandry,
 S.K. University of Agricultural Sciences
 and Technology of Kashmir
 Shuhama, Alusteng-190006
 Srinagar, J&K
 Phone No. : 0194-2262642
 Fax No. : 0194-2262207
 E-mail : drriyazshah@skuastkashmir.ac.in
drriyazshah@gmail.com

* No. of seats is subject to revision by the Department of Biotechnology, Government of India.

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:

- FOR ASSAM AGRICULTURAL UNIVERSITY, JORHAT:** B. Sc. / B. Tech. in Agriculture/Horticulture/Agricultural Biotechnology/Bioinformatics of 4 year duration from any recognized farm university having minimum CGPA 2.60 in 4.00 scale or 6.00 in 10.00 scale or 50% and above marks in traditional system. Graduates from general steam (3 year duration) may also be admitted in case seats remain vacant, however, they will have to take extra 20 credit hours as bridge course..
- 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.
- FOR CH. SARWAN KUMAR H.P. KRISHI VISHWAVIDYALAYA, PALAMPUR:** Agriculture, Horticulture or Forestry.
- 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.
- 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 MARATHWADA KRISHI VIDYAPEETH, LATUR (MAHARASHTRA):** B. Sc./B. Tech. in Agriculture, Horticulture, Forestry, Agril. Biotechnology, Bioinformatics (03/04 Yrs.) from recognized University with minimum CGPA 6.5 on 10 scale or 65% marks.
8. **FOR ORISSA UNIVERSITY OF AGRICULTURE & TECHNOLOGY, BHUBANESWAR:** Applicants must have passed 4 year Bachelor Degree in Agriculture/Horticulture/Forestry from a duly recognized University securing at least 55% marks in aggregate.
9. **FOR TAMIL NADU AGRICULTURAL UNIVERSITY, COIMBATORE:** Bachelor's degree in Agriculture, Horticulture, Forestry, or B. Tech in Biotechnology/ Horticulture / Bioinformatics under 10+2+4 pattern of education with at least 70% marks or equivalent OGPA of 3.00/4.00 or 7.00/10.00 from a Farm University. For SC/ST candidates, a pass in the qualifying degree is sufficient.
10. **FOR UNIVERSITY OF AGRICULTURAL SCIENCES, G.K.V.K., BANGALORE:** Agriculture, Horticulture, Forestry or Sericulture or B. Sc. Agril. Biotechnology/B. Tech. [Biotechnology]/ B. Sc (Agbiotech)/ B. Sc (Agri) in Biotechnology from recognized Agriculture/Horticulture/Forestry University..
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):** Bachelors degree in Biology (BZC)/ Microbiology/Biotechnology/Agriculture/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:** B.V.Sc.&A.H. degree recognized by Veterinary Council of India with minimum OGPA 6.0/10.0 or equivalent.
14. **FOR NANAJI DESHMUKH PASHU 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 MAHARASHTRA ANIMAL & FISHERY SCIENCES UNIVERSITY, NAGPUR :** The candidate must possess minimum CGPA of 6.60 in 10.00 point scale respectively at B.V.Sc. & A.H. degree course or a degree equivalent thereto.
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.

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%, 7½% and 3% of seats shall be reserved for Scheduled Caste (SC), Scheduled Tribe (ST) and Person with Disability (PWD) 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). 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.

IV. SYLLABUS

Syllabus for M.Sc. (Agri.) Biotechnology

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 poultries and their potential for milk, egg, meat and wool production; classification of feed and fodder; major contagious diseases affecting cattle and drought animals, poultries 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, tranquilizing 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 outbreak; 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-Germ 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-Various types of nitrogen fixing microorganism-Production of bacterial biofertilizers: Rhizobium, Azospirillum, Phosphobacteria etc.- Fungal biofertilizers; Ecto- and Endomycorizae- 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 nutrition aerobic and anaerobic respiration; Photorespiration Factors affecting respiration and Photorespiration. 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 watershed basis; erosion and runoff 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.

SYLLABUS FOR M.V.SC.

ANIMAL BIOTECHNOLOGY

Structure of prokaryotic and eukaryotic cells, cell wall, membranes, cell organelles, organization and functions, chromosome structure and functions, cell growth division and differentiation. Subunit structure of macromolecules and supermolecular systems. Self assembly of sub units, viruses, bacteriophage, ribosomes and membrane systems.

Scope and importance of biochemistry in animal sciences, cell structure and functions. Chemistry and biological significance of carbohydrates, lipids, proteins, nucleic acids, vitamins and hormones. Enzymes— chemistry, kinetics and mechanism of action and regulation. Metabolic inhibitors with special reference to antibiotics and insecticides. Biological oxidation, energy metabolism of carbohydrates, lipids, amino acids and nucleic acids. Colorimetry, spectrophotometry, chromatography and electrophoresis methods.

Chemistry of antigens and antibodies and molecular basis of immune reaction, radio-immune assay and other assays. Chemistry of respiration and gas transport, water and electrolyte metabolism. Deficiency diseases, metabolic disorders and clinical biochemistry. Endocrine glands, biosynthesis of hormones and their mechanism of action.

History of molecular biology, biosynthesis of proteins and nucleic acids, genome organization, regulation of gene expression, polymerase chain reaction, basic principles of biotechnology applicable to veterinary science gene

sequence, immunodiagnostics, animal cell culture, in vitro fertilization. Sub-unit vaccines: Principles of fermentation technology.

VETERINARY SCIENCE

Anatomy Physiology. Structure of cells, cell organelles, chromosome structure and functions, cell growth, division and differentiation and functions. Histology and physiology of mammalian organs and systems, major sense organs and receptors; Exocrine and endocrine glands, hormones and their functions, blood composition and function. Homeostasis, osmoregulation and blood clotting.

Veterinary Microbiology (Bacteriology, Virology, Immunology), Veterinary Pathology Veterinary Parasitology. Classification and growth characteristics of bacteria, important bacterial diseases of livestock and poultry, general characters, classification of important fungi. Nature of viruses, morphology, and characteristics, viral immunity, important viral diseases of livestock and poultry. Viral vaccines. Antigen and antibody, antibody formation, immunity, allergy, anaphylaxis hypersensitivity, immunoglobulins, complement system. Etiology of diseases and concept, extrinsic and intrinsic factors, inflammation degeneration, necrosis, calcification, gangrene, death, atrophy, hypertrophy, benign and malignant tumours in domestic animals. General classification, morphology, life cycle of important parasites, important parasitic diseases (Helminths, Protozoa and Arthropods) of veterinary importance with respect to epidemiology, symptoms pathogenesis diagnosis, immunity and control.

Veterinary Medicine, Epidemiology veterinary surgery and Veterinary Obstetrics and Gynaecology including reproduction. Clinical examination and diagnosis, Etiology, epidemiology, symptoms, diagnosis, prognosis, treatment and control of diseases affecting different body systems of various species of domestic animals, epidemiology— aims, objectives, ecological concepts and applications. General surgical principles and management of surgical cases. Types, administration and effects of anaesthesia. Principles and use of radiological techniques in the diagnosis of animal diseases. Estrus and estrus cycle in domestic animals, Synchronization of estrus, fertilization, pregnancy diagnosis, parturition, management of postpartum complications dystokias and its management, fertility, infertility and its management, artificial insemination.30 Information Bulletin 2010–2011

Veterinary Public Health, Veterinary Pharmacology & Toxicology. Zoonotic diseases through milk and meat, Zoo animal health. Source and nature of drugs, pharmacokinetics, Chemotherapy-sulpha drugs, antibiotics, mechanism and problem of drug resistance. Drug allergy, important poisonous plants, toxicity of important agro-chemicals and their detoxification, drugs action on different body systems.

ANIMAL SCIENCES

Animal Genetics and Breeding. Inheritance of acquired characters, cell structure and functional organization, mitosis, meiosis, Mendel's laws, gene interaction, sex determination, sex linkages, cytoplasmic, heredity, quantitative inheritance, linkages and combination, different types of chromosomes, gene structure and functions, mutation, speciation and evolution, inbreeding and crossbreeding, general and specific combining ability, heterosis, sire evolution, breeds of various important livestock species, breeding programmes, population statistics of livestock species.

Animal Nutrition, Feed Technology, Animal Physiology. General nutrition, carbohydrates, proteins and fats their digestion and metabolism protein value of the feed measure of protein quality and its application, requirement of energy, protein, minerals (macro and micro), vitamins and additives for pigs and poultry, protein-energy interrelationship, comparative design of nutrients in various species. Feed and animal body composition, function of water in body, rumen digestion and metabolism, nonprotein nitrogen metabolism in rumen, feeds and fodders, role of antibiotics, hormones and biostimulators. Digestion- control and motility and secretion of alimentary tract, gastric hormones, digestion and absorption in ruminants and monogastic animals, avian digestion. Mechanism, neutral and chemical control of respiration, gaseous transport and exchange, high altitude living, physiology of work and exercise. Control of male sexual behaviour, ovarian function, estrus, ovulation, mechanism of sperm capacitating, sperm and ovum transport, female genital tract, fertilization, implantation, maintenance of pregnancy and physiology of placenta. Artificial insemination collection, preservation, transport of semen, semen diluters, artificial insemination, embryo transfer-collection, preservation, transport and transplantation of zygotes, oocytes culture and in vitro fertilization.

Animal Husbandry, Dairy Science, Livestock Production and Management, Animal Product Technology & Meat Science and Poultry Science. General concepts of livestock production and management in Indian agro-climatic and socioeconomic conditions, impact of livestock farming in Indian agriculture; concept of livestock housing, production and reproduction management of livestock species, lactation management, concept of machine milking. Poultry industry in India, random sample test, breeding programmes for broilers and layers. Composition of milk, meat, fish, poultry and eggs, technology or processing and preservation of livestock products, methods of processing and storage of meat. Meat products, eggs, poultry meat, food preservation, refrigeration, freezing, freeze drying, dehydration canning, radio pasteurization, chemical additives, curing, smoking.

Veterinary Extension. Definition and concept of sociology, differences between rural, tribal and urban communities, social change, factors of change. Principles and steps of extension education, community development—aims, objectives, organizational set up and concept evolution of extension in India, extension teaching method. Role of livestock in economy, health and socio-psychology of rural, semi-urban and urban society. Identifying social taboos,

social differences, obstacles in the way of organizing programmes. Concept of marketing, principles of co-operative societies, animal husbandry development planning and programme, key village scheme, ICDD, Gosadan, Goshala, Role of Gram Panchayat in Livestock production of rural economy. Data analysis, basics of statistics and computational techniques.

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, ½ (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, PWD 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 do 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 University vis-à-vis his/her inter-se merit, but subsequently either does not join the concerned University or withdraw after

joining during the first semester then in that event, the initial deposit of Rs. 5,000/- and Rs.2,500/- for General/OBC and SC/ST/PWD categories respectively, shall stand forfeited.

- 7) The initial security deposit of Rs.5,000/-, (Rs.2,500/- in the case of SC/ST, PWD 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 2016 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 4.00 p.m. on 8th February, 2016 |
| 2. Issue of offline Application Forms (by Post) | 10th February, 2016 |
| 3. Last date for issue of offline Application Forms (by Post) | 10th March, 2016 |
| 4. Closing of online Application Process | till 5.00 p.m. 21st March, 2016 |
| 5. Last date of submission of completed Offline Application Form to reach JNU | 23rd March, 2016 |
| 6. Date and time of Entrance Examination | May 19, 2016
(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, 2016 |
| ii. Final result of allotted Universities | last week of June/1st week of July, 2016 |
| 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 self attested 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;
- (b) A Character Certificate from the Head of the Institution last attended;
- (c) Two self 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 self 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 PWD 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.
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. Female candidate may write her present surname in case of name change after marriage. Write 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) as per Central list	O B C

- 5(a). If you belong to Minority Community, darken the bubble, otherwise leave it blank.
6. **PWD Category:** In case you are a candidate with a minimum of 40% disability, darken the bubble corresponding to your Person with Disability category as given below. Otherwise leave it blank.
- | | | |
|----------------------------|---|----|
| Hearing Handicapped | : | HH |
| Orthopadeicaly Handicapped | : | OH |
| Visually Handicapped | : | VH |
- If you are VH category, darken the bubble for scribe i.e. for self/from JNU/computer required and scribe language, 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	Maharashtra	2 0
Assam	0 2	Manipur	2 1
Andhra Pradesh	0 3	Meghalaya	2 2
Arunachal Pradesh	0 4	Mizoram	2 3
Bihar	0 5	Nagaland	2 4
Chandigarh	0 6	Orissa	2 5
Chattisgarh	0 7	Pondicherry	2 6
Delhi	0 8	Punjab	2 7
Daman & Diu	0 9	Rajasthan	2 8
Goa	1 0	Sikkim	2 9
Gujarat	1 1	Tamil Nadu	3 0
Haryana	1 2	Telangana	3 1
Himachal Pradesh	1 3	Tripura	3 2
Jammu & Kashmir	1 4	Uttar Pradesh	3 3
Jharkhand	1 5	Uttarakhand	3 4
Karnataka	1 6	West Bengal	3 5
Kerala	1 7	Any other place(in India)	3 6
Lakshadweep	1 8	Foreign Countries	3 7
Madhya Pradesh	1 9		

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	4. Allahabad	1004
2. Ahmedabad	1002	5. Amritsar	1005
3. Aizawl	1003	6. Bangalore	1006

Name of the Centre		Centre Code	Name of the Centre		Centre Code
7.	Bareilly	1007	31.	Kolkata	1031
8.	Bhubaneshwar	1008	32.	Lucknow	1032
9.	Calicut	1009	33.	Mumbai	1033
10.	Chandigarh	1010	34.	Madurai	1034
11.	Chennai	1011	35.	Nagpur	1035
12.	Coimbatore	1012	36.	Pant Nagar	1036
13.	Dehradun	1013	37.	Patna	1037
14.	Delhi	1014	38.	Pondicherry	1038
15.	Dimapur	1015	39.	Pune	1039
16.	Gangtok	1016	40.	Raipur	1040
17.	Ghaziabad	1017	41.	Ranchi	1041
18.	Gwalior	1018	42.	Sambalpur.	1042
19.	Guwahati	1019	43.	Shillong	1043
20.	Goa	1020	44.	Shimla	1044
21.	Gorakhpur	1021	45.	Silchar	1045
22.	Hyderabad	1022	46.	Siliguri	1046
23.	Secundrabad	1023	47.	Srinagar	1047
24.	Imphal	1024	48.	Thiruvananthapuram	1048
25.	Indore	1025	49.	Udaipur	1049
26.	Itanagar	1026	50.	Varanasi	1050
27.	Jaipur	1027	51.	Vijayawada	1051
28.	Jammu	1028	52.	Visakhapatnam	1052
29.	Jodhpur	1029		(Overseas Centre)	
30.	Katihar	1030	53.	Kathmandu*	2000

* 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, 2016.
- 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. 1000/- for general category candidates including OBC candidates and Rs.500/- for the candidates belonging to SC/ST and Person with Disability categories. The entrance examination fee for Foreign Nationals is US\$ 40.00 or Rs.2640/-.
- 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 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.
 - 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. **Email ID**: The candidate is also advised to give his/her Email ID in the column. All queries/ replies would be entertained from the registered mail id.
22. **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.
- **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 offline Application Form must reach JNU latest by 23rd March, 2016. 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.**

