

POST GRADUATE SCHOOL  
INDIAN AGRICULTURAL RESEARCH INSTITUTE  
NEW DELHI-110012

No. PGS-I/1-401/AC/2016

July 26, 2016

ENDORSEMENT

A copy of the proceedings of the 40<sup>th</sup> meeting of the Academic Council held on 8<sup>th</sup> July, 2016 is forwarded herewith for information and necessary action. Comments, if any, may please be sent to the PG School within 15 days from the date of issue of the Proceedings.

1. All the members of the Academic Council and concerned Officers (By name)

2. PS to Director General, ICAR, Krishi Bhawan, New Delhi-110001

3. PS to Deputy Director General (Edn.), ICAR, KAB-II, Pusa, New Delhi-110012

4. Associate Dean, P G School

5. Master of Halls of Residences, P.G. School Hostel Office

6. Sr. Admn. Officer, IMC (35 copies for members of Board of Management)

7. Staff Officer, Director's Personal Section, IARI.

8. PS to Dean & Joint Director (Edn.), IARI/PS to Registrar/PS to Comptroller

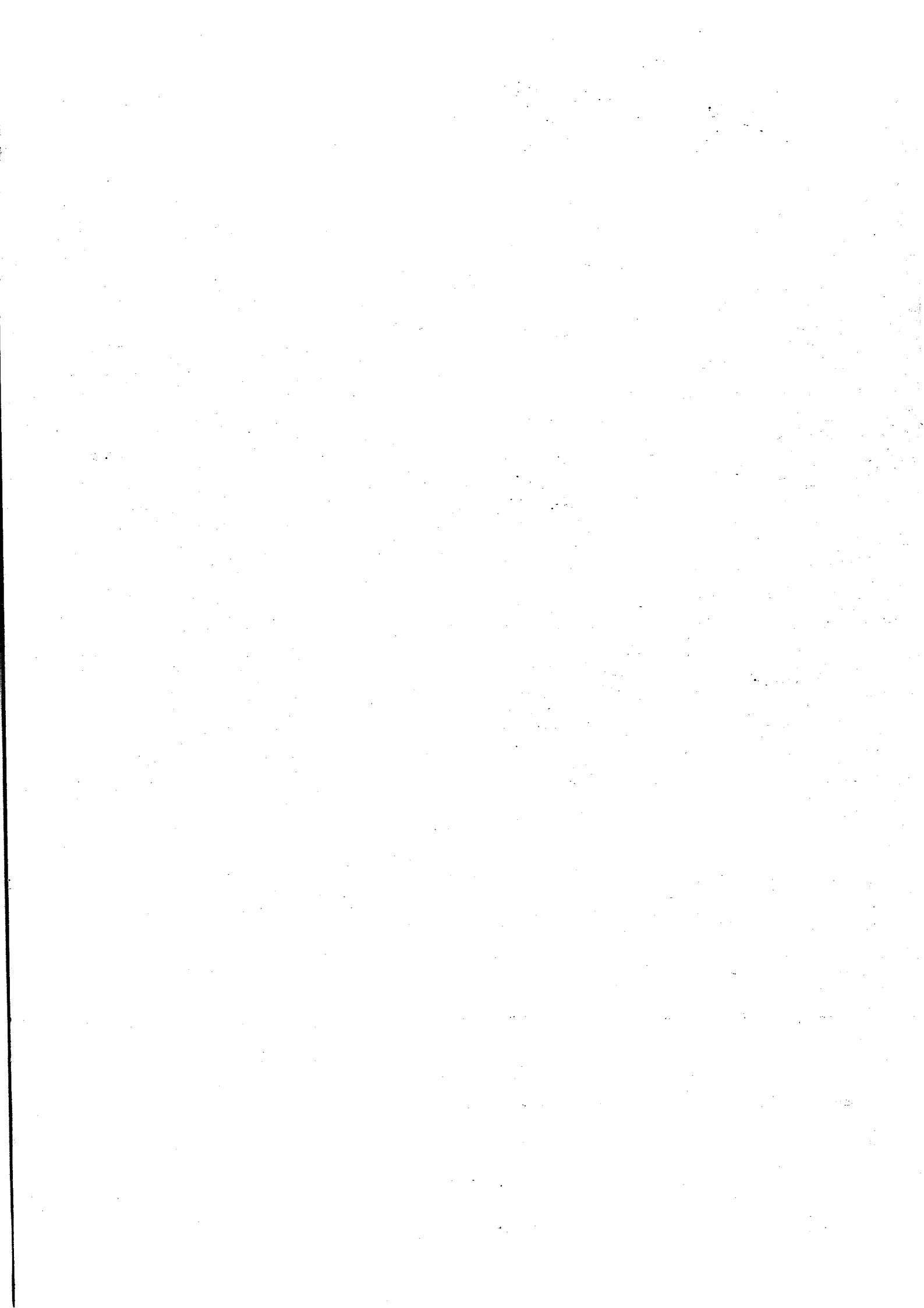
9. Assistant Administrative Officer, Post Graduate School-II

10. Shri A. K. Tyagi, Chief Technical Officer, P.G. School

11. Dr. S.K. Tyagi, Chief Technical Officer, P G School

12. Concerned Dealing Assistants, PGS-I

(Shashi Prabha Razdan)  
REGISTRAR





Agenda Item No.	Description of Agenda Items
401.1	Confirmation of the proceedings of the 400 <sup>th</sup> meeting of the Academic Council held on May 20, 2016
401.2	Action Taken Report on the Proceedings of 400 <sup>th</sup> meeting of the Academic Council held on May 20, 2016
401.3	Recommendations of the Standing Committee on Faculty & Discipline made in its meeting held on 16.6.2016
401.4	Recommendations of the Standing Committee on Courses Curricula and Academic Affairs made in its meeting held on 18.6.2016
401.5	Report of the Committee who visited ICAR-IIHR, Bengaluru, ICAR-CIAE, Bhopal and ICAR-IISWC, Dehradun to review the IARI, PG outreach programme
401.6	Finalization of the results of the candidates for their admission to M.Sc./M.Tech./Ph.D. degree courses at IARI for the Academic Session 2016-17
401.7	Any other item with the permission of the Chair

Thereafter, the following agenda items were taken up for consideration:

**Outgoing members**  
The Chairperson also placed on record the valuable contributions of Dr.(Mrs.) Pratibha Sharma, Former Professor, Plant Pathology outgoing member of the Academic Council in strengthening the PG education at IARI.

**New members**  
1. Dr.M.R. Dinesh, Director, IIHR, Bengaluru  
2. Dr. V.K. Baranwal, Professor, Plant Pathology, IARI, New Delhi

Dr. R.K.Jain, Dean and Joint Director (Edn.) extended a formal welcome to the Chairperson, Academic Council for attending the meeting. Thereafter, Dr.(Ms.) Ravinder Kaur Director and the Chairperson of Academic Council warmly welcomed the outside members in the Academic Council and all the members present in the meeting. She also welcomed the new members of the Academic Council who were attending the meeting for the first time:  
Dr. C. Viswanathan, Chairman, Examination Committee participated in the meeting as Special invitee.

6. Dr. U.C. Sud, Director, IASRI
7. Dr. V. Mahajan, Project Director (Acting), IIMR, New Delhi
8. Dr. Seema Jaggi, Professor, Agril. Statistics and Com. Application
9. Dr. S.K. Jha, Professor, Post Harvest Technology
10. Mr. Abhijit Sarkar, Students' Representative to the Academic Council

**Agenda Item No. 401.1** Confirmation of the proceedings of 400<sup>th</sup> meeting of the Academic Council held on 20.5.2016

The Chairperson called for the comments, if any, from the members of the Academic Council on the proceedings of the 400<sup>th</sup> meeting of the Academic Council. Since no comment was there, the proceedings of the above meeting was confirmed.

**Agenda Item No. 401.2** Action taken report on the proceedings of the 400<sup>th</sup> meeting of the Academic Council

Action taken report was presented by the Dean and Joint Director (Edn.).

**Agenda Item No. 401.3** Consideration of the proceedings of the meeting of the Standing Committee on Faculty and Discipline held on 16.6.2016

Academic Council approved the following recommendations made by the Standing Committee on Faculty and Discipline.

**401.3.1** Induction of the following five Scientists into PG Faculty in their respective disciplines as they meet the qualifications/eligibility criteria as prescribed in the PG School Calendar.

S. No.	Name & Designation	Discipline
1.	Ms. Shaloo, Scientist	Computer Application
2.	Mr. Kanchan Sinha, Scientist	Agricultural Statistics
3.	Ms. Monika, Scientist	Agricultural Physics
4.	Ms. Mukta Chakraborty, Scientist (SG)	Agricultural Chemicals
5.	Mr. Chobe Kapil Atmaram, Scientist	Soil Science and Agricultural Chemistry

**401.3.2** Recognition of the following eleven faculty members as Research guides for M.Sc. guidance in their respective disciplines at IARI, New Delhi/ IARI PG outreach programme at CIAE, Bhopal as they meet the prescribed requirements for becoming the research guides.

S. No.	Name & Designation	Discipline
1.	Dr. Satyapriya, Senior Scientist	Agricultural Extension
2.	Dr. Vignesh M, Scientist	Genetics
3.	Dr. P.K. Bhowmick, Scientist	Genetics
4.	Dr. Vinutha T, Scientist	Biochemistry
5.	Dr. Markandey Singh, Senior Scientist	Floriculture and Landscape Architecture
6.	Dr. Gunjeet Kumar, Principal Scientist	Floriculture and Landscape Architecture
7.	Dr. (Ms.) Mandira Barman, Scientists	Soil Science and Agricultural Chemistry
8.	Dr. Subodh Kumar Sinha, Senior Scientist	Molecular Biology and Biochemistry
9.	Dr. ChandrParkash, Principal Scientist	Vegetable Science
10.	Dr. M.R. Khan, Principal Scientist*	Nematology
11.	Dr. Shukdev Mangaraj, Senior Scientist (CIAE, Bhopal)*	Agricultural Engineering

\*Dr. M.R. Khan and Dr. S. Mangaraj will be eligible for M.Sc. and Ph.D. guidance, respectively keeping in view their previous experience of teaching and guidance of P.G. students

401.3.3 Induction of following ten scientists of the ICAR Institutes of NE region and Jharkhand into PG Faculty as they meet the qualifications/eligibility criteria prescribed in the PG School Calendar.

S. No.	Name, Designation and Institute	Discipline in which recognition is sought
1.	Dr. Anjani Kumar Jha Sr. Scientist (Hort.), ICAR RC-NEH, Umiam	Vegetable Science
2.	Dr. V.K. Verma Scientist (Hort.), ICAR RC-NEH, Umiam	Vegetable Science
3.	Dr. B.K. Sethy Senior Scientist ICAR RC-NEH, Umiam	WST
4.	Dr. Anup Das Principal Scientist (Agronomy) & Head, Division of Crop Production, ICAR RC-NEH, Umiam	Agronomy
5.	Dr. A.K. Singh Principal Scientist and Head, ICAR RCER, Ranchi	Vegetable Science
6.	Dr. R.S. Pan, Principal Scientist ICAR RCER, Ranchi	Vegetable Science
7.	Dr. Sushanta Kumar Naik Sr. Scientist (Soil Sci.) ICAR RCER, Ranchi	WST
8.	Dr. C.V. Singh Sr. Scientist (Agronomy), Central Rainfed Upland Rice Research Station, Jharkhand	Agronomy
9.	Dr. N.P. Mandal Principal Scientist (Plant Breeding), Central Rainfed Upland Rice Research Station, Hazaribagh, Jharkhand	Genetics
10.	Dr. Yogesh Kumar Sr. Scientist(Plant Breeding) and Central Rainfed Upland Rice Research Station, Hazaribagh, Jharkhand	Genetics

401.3.4 On the issue of revision in existing guidelines for becoming a Faculty Member, the Academic Council decided the Standing Committee to revisit its recommendations keeping in view of all the aspects.

401.3.5 On the issue of guidelines framed by the Standing Committee for recognition of Adjunct Professor and Adjunct Faculty, the Academic Council after detailed deliberations decided that the Standing Committee to revisit the guidelines framed.

401.3.6 On the issue of fixing tenure/nomination/renomination for Institute level responsibility, like MOHR, Associate Dean, PS (PPI), Associate Warden, In-Charge of Publication Unit, In-Charge Phytotron Facility, Radiological Safety Officer, etc., the Academic Council was of the view that these issues shall be addressed by the Director.

401.3.7 On the issue of revision of guidelines for nomination of Professors, the Academic Council agreed with the recommendation of Standing Committee that existing guidelines should include quantifiable assessment criteria relevant to teaching and research guidance.

**401.3.8** The Academic Council approved the recommendation of Standing Committee for enhancing the tenure of Professor from 3 to 5 years keeping party with other tenurial positions in ICAR and other Govt. Organizations.

**401.3.9** On the issue of transfer of faculty from one discipline to another discipline, the Academic Council was of the opinion that the Professor/Board of Studies of the concerned discipline should follow the guidelines as per the PG calendar.

**401.3.10** On the issue of modification of APAR format for the Faculty giving adequate weightage to teaching, research and extension, the Academic Council was of the opinion that it comes under the purview of the Council.

**Agenda Item No. 401.4 Consideration of the Proceedings of the meeting of the Standing Committee on Courses Curricula and Academic Affairs held on 18.6.2016**

The Academic Council discussed the recommendations of the Standing Committee and approved the following:

**401.4.1** The Academic Council agreed in principle on the introduction of new courses in the following disciplines. The Academic Council also suggested that the course content could be revised from time to time keeping in view the latest innovations/changes in the global scenario.

**I. DISCIPLINE OF ENVIRONMENTAL SCIENCES**

Title of the Course	Climate Smart Agriculture: Principles and Practices (ES 511)
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Number of Credits	2L+1P
Number of theory lectures per week and duration	2 (1hours each)
Number of Practicals lectures per week and duration	1 (3 hours)
To be offered	III Trimester

**Course content:**

- To impart theoretical and practical knowledge about the challenges of agriculture due to climate change
- To explore ways to enhance food security while contributing to adaptation and mitigation to climate change.

**Theory**

**Unit I**  
Climate change, agriculture and food security: An overview; Concept of climate-smart agriculture (CSA); Components of CSA and their assessment; Climate-smart crop production system: Approaches and practices; Traditional knowledge for CSA.

**Unit II**

Conservation, utilization and enhancement of genetic resources for CSA; Management of natural biological/chemical/physical processes for CSA; Potential impacts of climate change on water in agriculture; Managing water for CSA; Potential impacts of climate change on soil; Managing soil, crop residues, nutrients and microbial interventions for CSA; Insect and disease management for CSA; Integrated crop management for CSA

**Unit III**

Management of energy for CSA; Climate-smart management of livestock, forestry, agro-forestry, fisheries and aquaculture; Integrated farming system for climate resilience

**Unit IV**  
 Developing sustainable and inclusive food value chains for CSA; Risk reduction with CSA; Economic and policy frameworks for CSA; Community-based approaches for CSA

**Unit V**  
 Capacity development for CSA; Assessment, monitoring and evaluation for CSA; National and international initiatives on CSA; Mainstreaming CSA into National Policies and Programmes

**Practicals**  
 Quantifying greenhouse gas emission from crops and cropping systems; Assessing carbon sequestration potential of agro-ecosystems; Assessing the impacts of climate change on soil, water and crops; Assessing vulnerability of agriculture to climate change; Prioritizing the climate change adaptation and mitigation options; Evaluating impacts of conservation agriculture on climate resilience; Evaluating the impacts of integrated farming system on climate resilience.

**2. DISCIPLINE OF AGRONOMY**

Title of the Course	International Agriculture – Issues and challenges of 21 <sup>st</sup> Century (PGS 507)
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Number of Credits 2L + 0P  
 Number of theory Lectures per week and duration 2(1 hours each)  
 To be offered II trimester

(Jointly offered by Agronomy, Agricultural Economics and Agricultural Extension Divisions)

**Course content:**

**Objective**

- To sensitize and inspire students to current and future challenges and opportunities in the global agriculture.
- To focus on global agriculture in relation to resources, production, marketing and trade, climate change etc.
- To expose the students to global agricultural and rural development institutions including research, extension and education.

**Theory**

**Unit I**  
 Introduction to international agriculture, Global agricultural GDP and other development indicators. Global agricultural resources (land, water, fertilizers and pesticides, forests, biodiversity) and their management. Global Agricultural production Scenario: crop, animal and aquatic production under varying agro-ecologies. Major constraints facing the farm sector and suggested road maps. Farming systems under changing socio-economic and climate scenario for sustained agricultural production.

**Unit II**

Global trade and competitiveness in agricultural commodities, International markets and policies. National Agricultural Research System (NARS). Global issues and challenges in extension system and comparison with developed countries (USA, Japan, Netherlands and Australia). Policies on climate change adaptations and mitigations: Global and national perspectives; climate smart agriculture. Genetically modified organisms (GMO) including crops.

**Unit III**

Global/Regional initiatives and agricultural development-CGIAR, GFAR, GFRAS, GCARD, Regional Fora (APAARI, AARENENA, FARA, CACARLI, SAARC, ASEAN, etc), BRICS initiative and its global implications, IFAD, World Food Program, policies on poverty, food and nutritional security, WMO, WHO, WTO, WB, FAO, GEF, CBD etc. Treaty on Genetic Resources (ITGRFA), UPOV, National Sui Generis Systems (NBA, PV&FRA) in the context of access and benefit sharing (ABS), Chicago Council, World Food Prize, Feed the Future Initiative etc., Earth Summit, WSSD, SDGs, SRF of CGIAR.



**3. DISCIPLINE OF AGRICULTURAL ECONOMICS**

<b>Title of the Course</b>	<b>Introduction to Green Economics (AG ECON 523)</b>
<b>Number of Credits</b>	2L+0P
<b>Number of theory lectures per week and duration</b>	2(1 hours each)
<b>To be offered</b>	II trimester

**Course Content:**

- To provide an understanding of the principles of economics as they are applicable to the management of green economy in agriculture.
- To address issues of environment-economy linkages, concepts in sustainable and optimal use of renewable and non-renewable resources and green economy policies.

**Objective**

**Theory**

**UNIT I**

Economy-environment interaction; agricultural intensification and environment; concept of green growth; critical appraisal development and environment-trade off or synergy; population-food security-environment-poverty relations; sustainable development-introduction; environmental costs of technology advances; resource degradation; green revolution impacts- food, land, water, biodiversity.

Nature and scope of environmental/green economics; developmental linkages of agricultural economics- natural resources economics and environmental economics, unique features of natural resources, renewable and non-renewable resources-classification, entropy, laws of thermodynamics and their relevance in environmental economics.

**UNIT II**

Agriculture and quality changes of resources, land and water resource degradation, fertilizer/ pesticide pollution, nutrient mining, greenhouse gas emission, climate change, ecosystem services, biodiversity, regulation of agro-chemical use, integrated pest management, fertilizer imbalances and integrated nutrient management, use efficiency of resources, organic agriculture, sustainable agricultural practices, and protected agriculture.

**UNIT III**

Property Rights: private, common property and open access resources; characteristics of property rights-exclusion, enforceable, division and transferability; emergence of different forms of property rights to natural resources; property rights imperfections and impacts on common property, political economy of environmental regulation and management; demand and side management, carbon trading, markets for green agriculture including organic farming, environmental impact assessment, introduction to environmental valuation, social cost-benefit analysis.

**4. DISCIPLINE OF VEGETABLE SCIENCE**

<b>Title of the Course</b>	<b>Advances in breeding for stress resistance in vegetable crops (VSC 623)</b>
<b>Number of Credits</b>	3L+1P
<b>Number of theory lectures per week and duration</b>	3 (1hours each)
<b>Number of Practicals lectures per week and duration</b>	1 (3 hours)
<b>To be offered</b>	II Trimester

**Course Content:**

- To educate students about recent advances in vegetable breeding for biotic and abiotic stress resistance/tolerance
- To provide hands on training on various screening techniques for breeding materials against major diseases, insect/pests and abiotic stresses.

**Theory**

**Unit I**

Nature, nomenclature and classification of stresses. Major challenges for vegetable breeding in biotic and abiotic stresses in era of climate change. Genetic, physiological and molecular mechanisms of biotic

and abiotic stress resistance/tolerance. Host-parasite interaction variation in pathogens, nematodes and host, factors affecting host resistance. Concept of resistance breeding, its implications and significance in vegetable breeding. Genetics of stress resistance/tolerance in major vegetable crops.

#### Unit II

Search for new resistance gene(s)/QTLs in wild species of vegetable crops. Pre-breeding for harnessing wild relatives to transfer resistance gene(s)/QTLs in major vegetable crops. Problems and prospectus of pre-breeding related to biotic and abiotic stresses. Biotechnological tools to assist pre-breeding, MAS and pyramiding of resistance gene(s) and elimination of linkage drag. Transgenic development for stress tolerance in major vegetable crops.

#### Unit III

Genetic and genomic resources for biotic and abiotic stress tolerance in major vegetable crops. Recent advances in breeding for biotic stress resistance/tolerance to fungal, bacterial, viral, phytoplasma disease, insect/pest, nematodes in major vegetable crops.

#### Unit IV

Recent advances in breeding for abiotic stress tolerance to drought, heat, cold, heavy metals toxicity, salinity major vegetable crops (Solanaceous crops, Cole and root crops, Cucurbits, Okra, Onion and legume vegetables). Designing futuristic plant architecture of vegetable crops through genetic manipulation to overcome biotic and abiotic stresses.

#### Unit V

Resistance breeding against soil borne pathogens, nematodes in major vegetable crops (Cucurbits, tomato, capsicum) suitable for protected cultivation. Root stock breeding for biotic, abiotic stress in solanaceous and cucurbitaceous vegetable crops. Achievements in resistance breeding of vegetable crops for biotic and abiotic stress.

#### Practicals

Creation of artificial epiphytotic conditions, mass screening techniques for breeding materials against major diseases, insect/pests and abiotic stresses. Detailed study of severity and incidence of different pathogens, nematodes, salinity, temperature of important of vegetable crops. Molecular techniques for detection of plant pathogens, validation of DNA markers and transformation.

(iii)

Title of the Course	Advances in breeding for quality and special traits in Vegetable Crops (VSC 624)
Number of Credits	3L+1P
Number of theory lectures per week and duration	3 (1hours each)
Number of Practicals lectures per week and duration	1 (3 hours)
To be offered	III Trimester

#### Objective

- To impart knowledge on recent advances in improvement of quality and special traits in vegetable crops using conventional breeding and biotechnological approaches.

#### Unit I

Quality vegetables- nutritional profiles and role in human nutrition and health; Biochemistry and genetics of primary nutrients (carbohydrates, proteins) and secondary nutrients (minerals, vitamins, amino acids, anti-nutrients, phytochemicals and bioactive compounds) in vegetable crops. Organoleptic characteristics, functional compounds and special traits of industrial use in vegetable crops; Genetic and genomic resources for sustaining quality traits in vegetable crops; Importance of composition data in breeding nutrient dense varieties of vegetable crops; Designing vegetable varieties for multiple purpose such as fresh market, pharmaceutical, pharmaceutical industrial uses through conventional and molecular approaches.

#### Unit II

Brassica vegetable crops- biochemistry and genetics of glucosinolates, carotenoids and anthocyanins; breeding strategies and molecular approaches for their improvement; Breeding cucurbits for quality traits- biochemistry, genetics & molecular approaches for improvement in cucurbitacin, momordicin, charantin, carotenoids, saponin and phenolics; Breeding for quality in solanaceous vegetable crops:

tomato (lycopene, anthocyanin, beta-carotene, TSS, acidity etc.); brinjal (anti-diabetic properties, anthocyanin); peppers (*Capsanthin, capsorubin, capsacin, carotenoids, chlorophyll*); potato (starch, protein, carotenoids, phenolics, mineral, reduction in cold sweetening, starch quality etc.)

### Unit III

Breeding quality root vegetable crops: Biochemistry and genetics of carotenoids, anthocyanin and sugars in carrot; breeding and molecular approaches for improvement; Radish and turnip- biochemistry and genetics of pungency and colour and breeding strategies for improvement; Genetics and breeding for colour and beta-carotene quality traits in beetroot; molecular basis and biotechnological approaches for improvement.

### Unit IV

Genetics and breeding strategies for improvement of dietary micronutrients and colour content; Breeding and molecular approaches for reduction of anti-nutrients in legume and leafy vegetables; Genetics and advances in breeding for quality traits in okra especially iodine, and sulphur compounds, flavonoids, antioxidants etc. in onion & garlic; breeding and biotechnological approaches for elimination of allergens in vegetable crops.

### Unit V

Bio-fortification in vegetable crops; Genetic engineering for improvement of quality traits in vegetable crops; nutrigenomics; Bioavailability of dietary nutrients from biofortified vegetable crops and impact on micronutrient malnutrition; Achievements in breeding for quality in vegetable crops.

### Practicals

Nutritional profiling of vegetable crops; Analysis of phytochemicals and functional constituents in vegetable crops; Anti-nutrients in legume and leafy vegetables; Advances in phenotyping for micronutrients in vegetable crops. Sampling procedures for quality analysis; Composition data analysis in vegetable crops; Exposure to vegetable based food, herbal and pharmaceutical industries for learning commercial analytical procedures, infrastructure and interaction for exploring industrial potential of vegetable crops.

## 5. AGRICULTURAL EXTENSION

(i)

Title of the Course	Introduction to Emerging Agricultural Technologies (AG EXT 560)
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Number of Credits

2L+1P

Number of theory lectures per week and duration

2 (1hours each)

Number of Practicals lectures per week and duration

1 (3 hours)

To be offered

II Trimester

Course content:

### Objective

- To provide knowledge about emerging agricultural technologies for enhanced competencies of the students of agricultural extension.

### Theory

### UNIT-I

Agro ecosystem analysis, concept and importance of Integrated Farming Systems, Organic farming practices and its scope, Group action for efficient agricultural production and marketing activities.

### UNIT-II

Hi-tech horticulture, vertical farming and precision farming, protected cultivation, urban and peri-urban agriculture, specialty agriculture, secondary agriculture, post-harvest management- technologies for handling, grading, packaging, storage, value addition and processing in agriculture: quality standards and food safety measures for agricultural export promotion.

### UNIT-III

Seed production technologies, seed testing, seed certification, seed and planting materials act; Biotechnology and nanotechnology: Concepts and application in agriculture.

**UNIT-IV**  
 Importance and scope of farm mechanization, custom hiring services for promoting mechanization of small holdings; Natural resource management - soil and water conservation, watershed management, management of problems of soil and water, efficient irrigation systems, technological options for abiotic stress:

**UNIT-V**  
 Concept of remote sensing, importance and scope of GIS and GPS application in agriculture, Energy efficient agriculture- emerging issues and technologies, Good Agricultural Practices. Impact of climate change in agriculture, conservation agriculture for climate smart agriculture.

**UNIT-VI**  
 IPM, IDM and Integrated Nematode Management, Integrated weed management.

**Practicals**  
 Experiential learning of IARI technologies through participation in experimentation process (Cultivation practices and observations) at concerned experimental and IARI demonstration plots, Hands on experiences in technology application for nursery and crops under protected cultivation system, Operation of micro-irrigation and fertigation systems, Field experience of farm mechanization and their operations, Working out the resource flow and income in Integrated Farming System (IARI model), Demonstration of IPM, IDM and Integrated Nematode Management, hands on experiences in GIS and GPS application.

(iii)

Title of the Course	Number of Credits	Number of theory lectures per week and duration	Number of Practicals lectures per week and duration	To be offered
<b>Advances in Instructional Technology (AG EXT 607)</b>	3L+1P	3 (1hours each)	1 (3 hours)	III Trimester

**Course content:**

**Objective**

- To enable the students to design, utilize, manage and evaluate instructional technology for facilitating learning environment.

**Theory**

**Unit I**

Scope and significance of educational technology, philosophy and historical perspective of education, Educational policies, Educational psychology and application of pedagogical andragogical principles for instructional technology.

**Unit II**

Learning theories, methods and models, learning process, modeling of learning for behavioral modification, disability functions in learning methods, Experiential Learning, Bloom's taxonomy of learning domains, programmed instruction, content curation techniques, research trends in instructional and educational technology.

**Unit III**

Micro-teaching rubric, best practices in teaching-learning, curricular enhancements, feedback mechanism, teaching vs learning styles, teaching philosophy statements and portfolio, communication skills for effective teaching, problem solving, critical thinking, creativity and motivation in learning.

**Unit IV**

Virtual and web based learning, innovative models of teaching and learning, interactive teaching and learning - student engagement techniques, E-learning, M-learning, IT's for Learning Management Systems (LMS), Education Management Information System (EMIS), innovative instructional approaches (Mnemonics, Z-A approach), Massive Open Online Courses (MOOCs), MOODLE, POODLE and Recyclable Learning Objects (RLOs) in blended learning, flipped classroom and distance education, innovative educational programmes, Role of web 2.0, apps and mobile learning in 21<sup>st</sup> century, emerging technology for teaching-learning, Augmented Reality (AR) learning environment, geospatial technologies and their application in education.

**Practicals**  
 Use of MOODLE and FODDLE; Simulation exercise on Augmented Reality (AR) learning environment; Designing RLOs; Mind-mapping exercises; Content curation; Educational games for effective teaching-learning

(iii)

Title of the Course

**Quantitative techniques for social research (AG EXT 608)**

Number of Credits	Number of theory lectures per week and duration	Number of Practical lectures per week and duration	To be offered
2L+2P	2 (1hours each)	2 (3 hours)	1 Trimester

**Course Content:**

**Objective**

- To develop the analytical skills and application of various qualitative and quantitative techniques in social research.

**Theory**

Introduction to qualitative and quantitative approaches, Data examination, Indicators: Typology, Weighting and Measurement, Development of indices; Approaches to classification; Classification Analysis; Framework and approaches to Sustainable Livelihood analysis, Livelihood Vulnerability analysis

**UNIT II**

Application of linear and non-linear (logit, probit and tobit) regression models in social research; Data reduction and identification of constructs with Factor analysis; Predicting farmers' preferences with conjoint analysis; Determining farmers' typologies with Cluster Analysis; Measures of Similarity or Dissimilarity, Perceptual mapping (Multidimensional Scaling) with metric and non-metric attributes; Communication and Social network analysis, Frame Analysis

**UNIT III**

Application of Structural Equation Modeling for adoption decision; Simulation research in behavioral science; Agent based modeling; Diffusion modeling; Handling panel data, Trend analysis, Delphi technique.

**UNIT IV**

Ethnography, Field Research and Grounded Theory; Experimental designs for farmer participatory research and On-farm technology assessment; Ranking techniques; Application of Non-parametric tests in social research.

**Practicals**

Development of framework and conduction of Household vulnerability analysis of IARI model village/adopted village; Identifying adopters' typologies and Conducting cluster analysis with software (SPSS), inference making and describing the results; Identification of technological preferences of farmers; Identification of social and communication network among farmers using network analysis (UC NPT software); Application of Delphi techniques; Simulation modeling of adoption behavior of farmers using primary and secondary data from adopted and non-adopted villages; Planning experimental designs for technology assessment trials and analysis of data with KVK and CATAT.

**401.4.2**

The Academic Council noted the request for revision of PG Course Curricula from the Professor of discipline of Environmental Sciences and Genetics. The Academic Council was of the opinion that all the Disciplines shall be requested to submit the proposal for the revision of existing Course Curricula duly approved by the concerned Board of Studies for Standing Committee's consideration.

**401.4.3**

On the issue of consideration of the Choice Based Credit System (CBCS) and letter based grading System, the Academic Council discussed in detail and made the following observations:

So far as Implementation of Choice Based Credit System (CBCS) is concerned, it is already there in practice at IARI. Therefore, we have only to frame the modalities for awarding letter grades as per the UGC recommendations.

The Academic Council decided that Standing Committee may once again revisit the proposed range of marks for awarding letter grades keeping in line with UGC recommendation.

**401.4.4:** Keeping in view of several grievances received from Professors/Faculty regarding the present provision of temporary relief of PG students for accepting employment under split Ph.D., the Academic Council opined that the issue may be reviewed in the interest of strengthening of PG Education/Research by the Standing Committee for further consideration in the next Academic Council meeting.

**401.4.5.** On the issue of less number of applications received for Ph.D. degree programme in some of the discipline of IARI, the Academic Council expressed deep concern and recommended that the Chairperson, Academic Council may write to the concerned disciplines to review and suggest suitable recommendations or expansion of existing eligibility criterion for increasing no. of applicants in these disciplines.

**401.4.6** On the issue of Pedagogy and extension technology, the Academic Council decided that the discipline of Agricultural Extension may be given the responsibility of arranging a lecture on this subject every year in the auditorium, for the benefit of PG School faculty.

**Agenda Item No. 401.5 Report of the Committee who visited ICAR-IHR, Bengaluru, ICAR-CIAE, Bhopal and ICAR-IISWC, Dehradun to review the IARI, PG outreach programme**

The Academic Council deliberated in detail on the Report of the Committee constituted under the Chairmanship of Dr. Indra Mani, Head, Division of Agricultural Engineering to examine the issues: (i) to review the ongoing IARI PG outreach programme at IHR, Bengaluru and CIAE, Bhopal; (ii) possibilities of initiation of PG outreach programme at IISWC, Dehradun from the Academic Session 2017-18.

The Academic Council expressed satisfaction on the progress of ongoing IARI PG outreach programmes at IHR, Bengaluru and CIAE, Bhopal and accepted the recommendations of the Committee: (i) Special efforts to be made to create student's amenities at faster pace for providing the best ambience for PG teaching and research. IARI may take up the issue with the Council/Education Division for the release of required funds on priority for strengthening the Out-reach programme: (ii) To continue with the existing system of both teaching and research activities (Ph.D. students) at IHR, Bengaluru and CIAE, Bhopal, (iii) The PG programme at IISWC, Dehradun could be initiated from the Academic Session 2018-19, and only after creation/development of minimum necessary students' amenities/facilities at IISWC, Dehradun and (iv) IARI, New Delhi- the Deemed-to-be-University must submit proposals to get the status of 'Off-campus Centres' for the three institutes from the University Grants Commission as per its revised guidelines.

Agenda Item No. 401.6 Finalization of the results of the candidates for Admission to M.Sc./M.Tech./Ph.D. degree courses at IARI for the Academic Session 2016-17

401.6.1 Admission of the candidates for M.Sc./M.Tech.degree programs at IARI including IARI- Assam and IARI- Jharkhand.

The Academic Council have been apprised that the entrance examination for admission of the candidates for M.Sc./M.Tech.degree programs for SAUs/IARI was arranged by the Education Division of ICAR. The counselling of the candidates for M.Sc./M.Tech. programs for SAUs/IARI has been scheduled from July 9 -19, 2016 by the Education Division, ICAR. The final list of selected candidates for IARI will be available only after Counselling.

Keeping in view of the above, the Academic Council authorized Dean, PG School to finalize the list of the candidates for admission to M.Sc./M.Tech. degree programme with the approval of the Chairperson, Academic Council.

401.6.2 Selection of foreign students for M.Sc. and Ph.D. degree courses at IARI for the Academic session 2016-17.

Thirty seats are available under this stream. The Academic Council ratified the selection of following 12 - foreign nationals (5-Ph.D. & 7-M.Sc.) as their selection was finalized by the Director, IARI and Chairperson of the Academic Council on the recommendations of the Professors of the respective disciplines and the Dean & Joint Director (Edn.)

Ph.D.

S. No.	Name of Candidate	Discipline	Country	Scheme
1.	Ms. Gamage Dona Gaya Chaturani	Molecular Biology and Biotechnology	Sri Lanka	ICAR International Fellowship
2.	Frederick Kobba	Agricultural Extension	Sierra Leone	ICAR International Fellowship
3.	Peter Tindukin Birteeb	Agricultural Statistics	Ghana	Africa Scholarship Scheme
4.	Ali Refaat Ali Moursy	Soil Science and Agricultural Chemistry	Egypt	Africa Scholarship Scheme
5.	Ms. Le Thi Khoe	Fruits and Horticultural Technology	Vietnam	General Scholarship Scheme

M.Sc.

S. No.	Name Of Candidate	Discipline	Country	Scheme
1.	Om Prakash Ghimire	Plant Physiology	Nepal	Nepal Aid Fund
2.	Pooran Seeraj	Agricultural Physics	Guyana	Commonwealth Scholarship Scheme
3.	Faizan Ullah Faizan	Agricultural Extension	Afghanistan	Special Scholarship Scheme
4.	Mohammadullah	Environmental Sciences	Afghanistan	India-Afghanistan Fellowship Programme
5.	Ahmad Farid Azizi	Post Harvest Technology	Afghanistan	India-Afghanistan Fellowship Programme

Based on the performance in the written examination, the Examination Committee recommended the names of 360 candidates for interview in various disciplines, of which 333 appeared at the interview in the respective disciplines. The candidates were

Hyderabad, Kolkata, Pune, Udaipur and Varanasi) spread across the country. Centres (one centre each at Bhopal, Bengaluru, Coimbatore, Delhi, Guwahati, candidates appeared at the written examination which was held on April 24, 2016 at 10 candidates were allowed to appear for the written examination. A total of 1608 2044 valid applications were received for admission by the PG School, IARI and these approved the seats accommodating 27% reservation to OBC category. A total of 2016 as the last date for submission of applications. This year, the Academic Council respectively, for the Academic Session 2016-17 in February 2016, with March 14, Harvest Technology for Horticultural Crops disciplines at IHR, Bengaluru, Fruit Science, Floriculture and Landscaping Architecture, Vegetable Science, and Post Bhopal (Agricultural Processing & Structure, and Farm Power & Equipment) and in Agricultural Research Institute, in Agricultural Engineering discipline at CIAE, online for admissions to the Ph.D. degree programme in 26 disciplines at the Indian sister institutes, namely, CIAE and IHR were also invited. Applications were invited For the third consecutive year, applications for admissions to Ph.D. courses in our

This year candidates in eight disciplines who opted to write in Hindi were provided with question papers in Hindi besides English papers.

OBC/SC/ST/PC category candidates as per the norms prescribed by the Govt. of India. while finalizing the results due care has been taken towards the selection of helped in accomplishing this job very smoothly. He also informed the Council that members of the Examination Committee, Professors, Heads and faculty members who voluminous and time bound task. He also appreciated the contributions of all the providing him the opportunity to carry out this very important, confidential, recommendations of the Examination Committee. He conveyed his gratitude for Dr. C. Viswanathan, Chairman, Examination Committee presented the

398<sup>th</sup> meeting. Bhopal and IHR, Bengaluru, as per the approval of the Academic Council made in its admission of the candidates for Ph.D. degree courses at IARI, New Delhi, CIAE, which appeared in all the major national dailies in the month of March, 2016 for the entrance examination was successfully conducted starting with the advertisement The Dean & Joint Director (Edn.) informed the Academic Council that the process of

**401.6.3 Selection of the candidates for Ph.D. degree courses at IARI, New Delhi**

The Academic Council also approved that the applications of the foreign students which are under process and received if any, henceforth for the current academic year 2016-17, shall be got finalized by the Chairperson of the Academic Council on the recommendation of Dean & Joint Director(Edn.).

S. No.	Name Of Candidate	Discipline	Country	Scheme
6.	Naqibullah	Plant Pathology	Afghanistan	India-Afghanistan Fellowship Programme
7.	Esmail Jowainy	Fruits and Horticultural Technology	Afghanistan	India-Afghanistan Fellowship Programme



interviewed on July 4, 2016 by the Interview Boards duly constituted by the Director and Chairperson of the Academic Council, IARI in the respective disciplines.

The results of the entrance examination were compiled by the Examination Committee on the basis of the marks obtained by the interviewed candidates in the written examination, interview and their respective academic scores. The detailed result, as recommended by the Examination Committee, is placed for the consideration and approval of the Academic Council.

The Academic Council approved the following recommendations made by the Examination Committee:

Selection of 156 candidates for filling up the 156 seats under the Open Scheme at IARI as approved by the Academic Council in its 398<sup>th</sup> meeting held on November 28, 2015. This includes 6 physically challenged candidates. In addition to this, 7 other candidates are recommended for admission which includes 05 under ICAR In-service, 01 in the Faculty Up-graduation scheme and 01 under Departmental scientific scheme. Thus a total of 163 candidates are recommended for admission to the Ph.D. programme at PG School, IARI for the Academic Session 2016-17. For the PG outreach programme at sister Institutes, 10 candidates for CIAE, Bhopal and 16 candidates for IIHR, Bengaluru are also recommended for admission to the Ph.D. programme.

#### A. Admission of candidates under the Open scheme

##### • IARI, New Delhi

(i) Under the General category in the Open scheme, 79 seats were available for admission at IARI. 44 candidates belonging to categories other than General (OBC-38, SC-4, and ST-2) have been selected under the general category seats on the basis of their merit.

(ii) Forty-two seats were reserved for OBC category, 23 for SC and 12 for ST categories. Candidates are recommended to fill-up all these seats.

(iii) Out of the 42 seats under the OBC category, 10 seats remained unfilled due to lack of qualified candidates, two each in the disciplines of Agricultural Physics, Fruit Science and Agricultural Engineering (Farm Power & Equipment) and one each in Agricultural Chemicals, Agricultural Engineering (Soil & Water Conservation), Computer Application, Floriculture and Landscaping Architecture. These OBC seats are recommended to be filled up by transfer in the disciplines of Entomology (6 seats), Genetics (1 seat), Molecular Biology & Biotechnology (1 seat), Plant Pathology (1 seat), and Seed Science & Technology (1 seat).

(iv) For the SC category, 23 seats were reserved this year across different disciplines at IARI. Five seats remained unfilled in the SC category two in Post Harvest Technology-Horticultural Crops and one each in the disciplines of Agricultural Statistics, Fruit Science, and Plant Physiology due to the non-availability of qualified candidates in these disciplines. These 5 SC seats are recommended to be filled up by transfer 2 each in the disciplines of Entomology, Vegetable Science, and one in the discipline of Seed Science & Technology.

(ii) On the basis of merit, the Committee recommends a total of 7 seats to be filled up under the different Schemes. These include 05 seats under the ICAR In-service Nominee (5), one each in the disciplines of Agricultural Economics, Entomology, Genetics, Nematology and Plant Genetic Resources, one seat in the discipline of Plant Pathology under the Faculty Up-gradation Scheme and one under Departmental Scientific scheme in the discipline of Floriculture & Landscape Architecture.

(i) For the Academic Year 2016-17, the number of seats available under various schemes were as follows:

Faculty Up-gradation Scheme	- 10
ICAR In-service nominee	- 5
Departmental (Scientific)	- 10
Departmental (Technical)	- 26

### B. Admission in other schemes

The details of filled-up seats in all the disciplines and Wait-listed are given in the lists which are circulated to the Academic Council.

non-availability of qualified candidates.

Total of 10 seats for Ph.D. (6 General, 1 OBC, 2 SC and 1 ST) were recommended for admission at CIAE, Bhopal. Two OBC seats allocated in the discipline of Agricultural Engineering (Farm Power and Equipment) could not be filled due to

#### • PG School outreach programme at CIAE, Bhopal

For IHR, a total of 16 seats (8 General, 4 OBC, 3 SC, and 1 ST) were recommended for admission to Ph.D. Out of these, 3 OBC and 2 SC seats were filled-up by transfer from other sub-disciplines within the Institute.

#### • PG School outreach programme at IHR, Bengaluru

(vii) Thus all the 20 seats in the OBC (10 seats), SC (5 seats), ST (3 seats) and PC (2 seats) categories that remained unfilled on account of non-availability of qualified candidates in the originally approved disciplines are recommended to be filled up by transfer in other disciplines on the basis of merit, where candidates are available.

(vi) Out of 6 seats in Physically Challenged (PC) Category, two seats remained unfilled one each in the disciplines of Agricultural Statistics and Molecular Biology & Biotechnology, due to non-availability of qualified candidates. The Committee recommends filling up of these seats by transfer to Agronomy and Soil Science & Agricultural Chemistry, based on overall merit.

(v) Of the 12 seats reserved for the ST category this year, 3 seats remained unfilled one each in the disciplines of Agricultural Statistics, Biochemistry and Water Science & Technology, due to the non-availability of qualified candidates in these disciplines. The 3 unfilled ST category seats are recommended to be filled up by transfer one each in the disciplines of Agricultural Economics, Entomology and Genetics.

The list of selected candidates for Ph.D. degree programmes as approved by the Academic Council is placed at **Appendix-I (Table-I)**.

The Chairperson, Vice Chairman and all the members of Academic Council appreciated the work and dedication of the Examination Committee for successful completion of Ph.D. entrance examination programme.

**Agenda Item No. 401.7 Any other item with the permission of the Chair**

**401.7.1** On the issue of Consideration of MoU between IARI and CCSHAU, Hisar for facilitating PG students' training/research, the Academic Council was of the opinion that such proposals may be dealt on case to case basis after seeking concerned Head of the Divisions opinion..

The meeting ended with a vote of thanks to the chair.

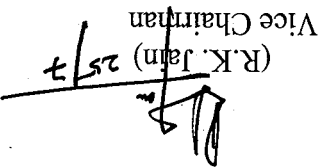
(Shashi Prabha Razdan)  
Member-Secretary



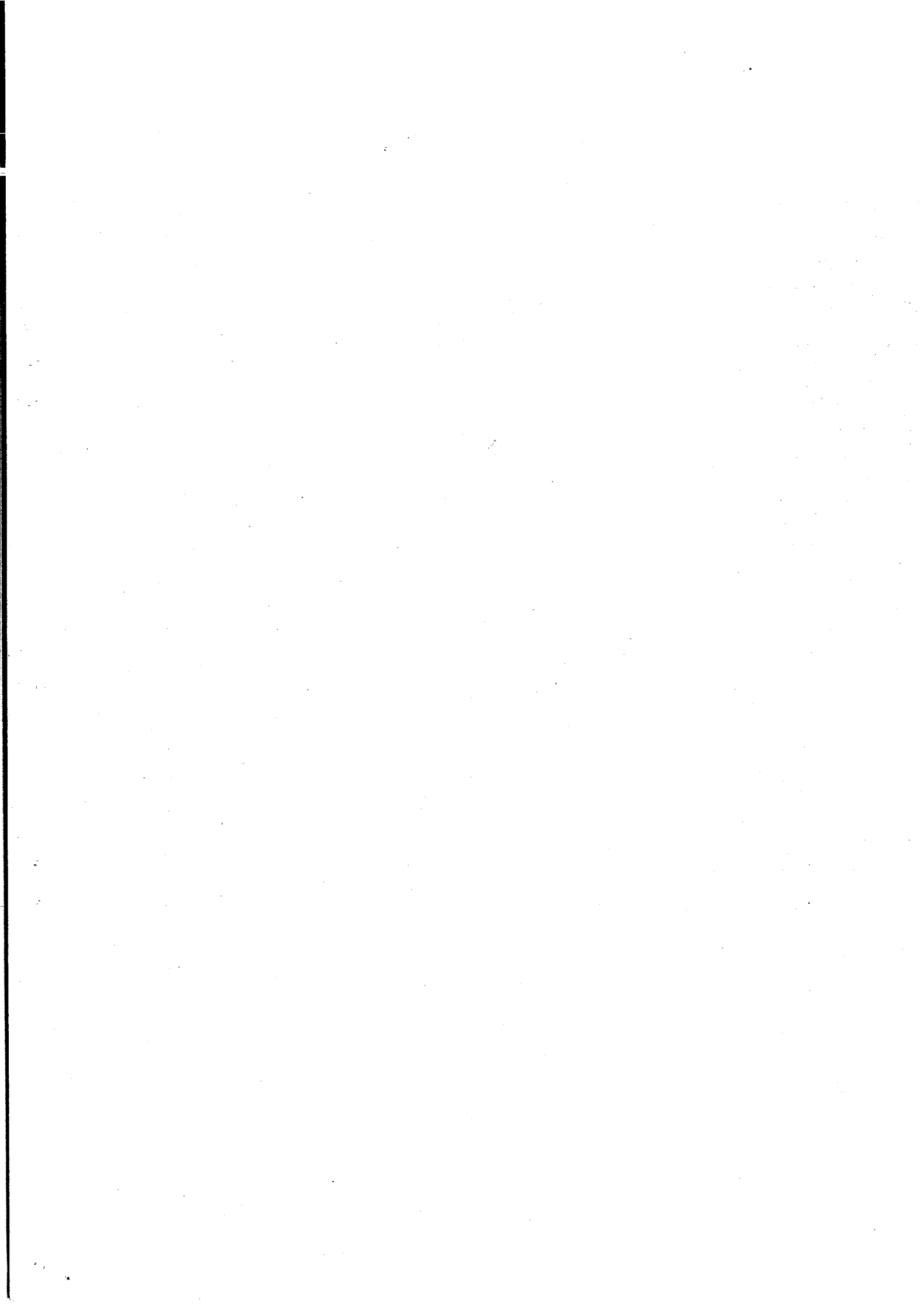
(Ravinder Kaur)  
Chairperson



(R.K. Jain)  
Vice Chairman



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**ICAR-INDIAN AGRICULTURAL RESEARCH INSTITUTE**  
**Ph.D. Exam 2016**  
**LIST OF SELECTED CANDIDATES FOR ADMISSION TO PH.D. PROGRAMME**  
**AT IARI/IHR/ICAE**  
**ACADEMIC YEAR 2016-17**

Sl. No	Roll No.	Name	Category	Scheme	Institute
1	0100001	ANINDITA PAUL	OBC*	Open	IARI
2	0100002	DINESH KUMAR YADAV	OBC*	Open	IARI
3	0100006	NIRANJAN KUMAR	OBC*	Open	IARI
4	0100010	SHANNON N SANGMA	GEN	Open	IARI
5	0100011	SHUBHAM YADAV	OBC	Open	IARI
6	0200027	PRIYANKA UPRETI	GEN	Open	IARI
7	0200012	JOBIN SEBASTIAN	OBC*	Open	IARI
8	0200004	CHIKKATHIMME GOWDA H R	OBC	Open	IARI
9	0200028	RAGHAVENDRA K J	OBC	Open	IARI
10	0200031	RIPU DONI	OBC	Open	IARI
11	0200030	RAVINDRA	SC	Open	IARI
12	0200021	NITHYASHREE M L	SC	Open	IARI
			SC	ICAR In-service	IARI
			<b>03-1 - AGRICULTURAL ENGINEERING- AGRICULTURAL PROCESSING &amp; STRUCTURE</b>		
13	0310068	PUNEET KUMAR	SC*	Open	ICAE
14	0310004	ALKA MISHRA	GEN	Open	ICAE
15	0310045	MAHANTI NAVEEN KUMAR	OBC*	Open	ICAE
16	0310062	PERUGU BALACHANDRA YADAV	OBC	Open	ICAE
17	0310056	NICKHIL C	SC	Open	ICAE
18	0310020	CHANGCHUK LAMO	ST	Open	ICAE
			<b>03-2 - AGRICULTURAL ENGINEERING-FARM POWER &amp; EQUIPMENT</b>		
19	0320070	RAJESHWAR SANDIYA	OBC*	Open	IARI
20	0320104	VAIBHAV CHAUDHARY	GEN	Open	IARI
21	0320036	HITESH BIJARNIYA	OBC*	Open	IARI
22	0320047	MANISH KUMAR	PC(GEN)	Open	ICAE
23	0320037	JADHAV MAHESH LAXMAN	GEN	Open	ICAE
24	0320096	SURAJ KRISHNA JADHAV	SC	Open	ICAE
			<b>03-3 - AGRICULTURAL ENGINEERING-SOIL &amp; WATER CONSERVATION ENGINEERING</b>		
25	0330011	ARTI KUMARI	GEN	Open	IARI
26	0330074	REETESH KUMAR PYASI	GEN	Open	IARI
27	0330103	TRUPTIMAYEE SUNA	SC	Open	IARI
			<b>04 - AGRICULTURAL EXTENSION</b>		
28	0400028	KRISHNA D KARJIGI	OBC*	Open	IARI
29	0400053	SANGEETA BHATTACHARYYA	GEN	Open	IARI
30	0400006	ALOK KUMAR SAHOO	OBC*	Open	IARI
31	0400049	RABEESH KUMAR VERMA	OBC	Open	IARI
32	0400017	CHANNAVEERESH R MOTAGI	OBC	Open	IARI
33	0400064	SUNIL KUMAR	SC	Open	IARI

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**ICAR-INDIAN AGRICULTURAL RESEARCH INSTITUTE**

**Ph.D. Exam 2016**

**LIST OF SELECTED CANDIDATES FOR ADMISSION TO PH.D. PROGRAMME**

**AT IARI/IHR/CIAE**

**ACADEMIC YEAR 2016-17**

Sl. No.	Roll No.	Name	Category	Scheme	Institute
34	0500004	ALKA RANI	OBC*	Open	IARI
35	0500006	BRIJESH YADAV	OBC*	Open	IARI
36	0500010	KOUSHIK BANERJEE	GEN	Open	IARI
<b>05 - AGRICULTURAL PHYSICS</b>					
37	0600035	PRIYANKA ANJOY	GEN	Open	IARI
38	0600023	GOPAL SAHA	GEN	Open	IARI
39	0600026	KULDEEP ASWAL	GEN	Open	IARI
40	0600008	AMIT SAHA	SC*	Open	IARI
41	0600044	SUBHRAJIT SATPATHY	GEN	Open	IARI
42	0600032	NOBIN CHANDRA PAUL	OBC	Open	IARI
<b>07 - AGRONOMY</b>					
43	0700099	SHANTI DEVI BAMBORIYA	OBC*	Open	IARI
44	0700054	KAVITA KUMARI	OBC	Open	IARI
45	0700013	ANITA KUMAWAT	OBC	Open	IARI
46	0700022	BHARAT RAJ MEENA	ST	Open	IARI
47	0700014	ANKIT	PC (GEN) (TR)	Open	IARI
48	0700075	POORNIMA S	SC	Open	IARI
<b>08 - BIOCHEMISTRY</b>					
49	0800045	SANDEEP KUMAR	GEN	Open	IARI
50	0800007	ASHOK KUMAR	GEN	Open	IARI
51	0800042	SACHIDANAND TIWARI	GEN	Open	IARI
52	0800026	MAHESH KUMAR SAMOTA	OBC	Open	IARI
<b>09 - BIOINFORMATICS</b>					
53	0900033	SOMYA SHARMA	GEN	Open	IARI
54	0900018	NALINIKANTA CHOUDHURY	OBC*	Open	IARI
55	0900009	BULBUL AHMED	GEN	Open	IARI
56	0900003	ANUBHAV ROY	SC	Open	IARI
57	0900029	SANDEEP KUMAR VERMA	OBC	Open	IARI
<b>10 - COMPUTER APPLICATION</b>					
58	1000012	MD ASHRAFUL HAQUE	GEN	Open	IARI
59	1000020	SHBANA BEGAM	GEN	Open	IARI
60	1000021	SONICA PRIYADARSHINI	OBC*	Open	IARI
<b>11 - ENTOMOLOGY</b>					
61	1100105	SUKHWINDER SINGH	OBC*	Open	IARI
62	1100064	PADALA VINOD KUMAR	OBC*	Open	IARI
63	1100048	LANEESHA	OBC*	Open	IARI
64	1100082	RAMYA N	OBC	Open	IARI
65	1100046	KEERTHI M C	OBC	Open	IARI
66	1100079	RAJGOPAL N N	OBC	Open	IARI
67	1100080	RAJNA S	GEN	ICAR In service	IARI

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ICAR-INDIAN AGRICULTURAL RESEARCH INSTITUTE

Ph.D. Exam 2016

LIST OF SELECTED CANDIDATES FOR ADMISSION TO PH.D. PROGRAMME

AT IARI/IHR/CIAE

ACADEMIC YEAR 2016-17

Sl. No.	Roll No.	Name	Category	Scheme	Institute
68	1100103	SUBHASH S	OBC (TR)	Open	IARI
69	1100043	KALANDI PARIDA	OBC (TR)	Open	IARI
70	1100100	SOURAV SARKAR	SC	Open	IARI
71	1100119	VARUN SAINI	OBC (TR)	Open	IARI
72	1100091	SATYAPRIYA SINGH	OBC (TR)	Open	IARI
73	1100081	RAMESH K B	OBC (TR)	Open	IARI
74	1100019	CHAITRA H S	OBC (TR)	Open	IARI
75	1100007	ANJALI M S	ST (TR)	Open	IARI
76	1100108	SUNIL NAIK H	SC (TR)	Open	IARI
77	1100107	SUNIL	SC (TR)	Open	IARI
<b>12 - ENVIRONMENTAL SCIENCES</b>					
78	1200024	JAYANTA THOKDAR	GEN	Open	IARI
79	1200040	PAWAN KUMAR LONI	OBC*	Open	IARI
80	1200045	RANJEET KUMAR CHAURASIYA	OBC*	Open	IARI
81	1200011	CHANDRASHEKARA T K	ST	Open	IARI
82	1200047	RAVI GANGWAR	OBC	Open	IARI
<b>13 - GENETICS</b>					
83	1300128	PREM CHAND GYANI	OBC*	Open	IARI
84	1300109	NITISH RANJAN PRAKASH	GEN	Open	IARI
85	1300165	SHYAM SUNDAR D	SC	Open	IARI
86	1300195	YANKAPPA UPPAR	OBC	Open	IARI
87	1300150	SELVARAJESWARI N	OBC	Open	IARI
88	1300094	MANISHA SAINI	OBC	Open	IARI
89	1300052	GANESH MEENA	ST	Open	IARI
90	1300036	BHARATH KUMAR ALAM	ST (TR)	Open	IARI
91	1300172	SUBHASH CHAND	OBC (TR)	Open	IARI
92	1300041	BHUVANESWARI S	GEN	Open	IARI
93	1300002	AALOK SHIV	SC	Open	IARI
94	1300168	SNEHA NYAMAGOUD	PC(GEN)	Open	IARI
<b>15 - MICROBIOLOGY</b>					
95	1500080	SHWETA PRIYA	GEN	Open	IARI
96	1500091	SWATI SAGAR	OBC*	Open	IARI
97	1500021	DEEPAK KUMAR KOLI	SC*	Open	IARI
98	1500003	AJAY KUMAR	OBC	Open	IARI
99	1500051	NIVETHA	OBC	Open	IARI
100	1500077	SHEKHAR KUMAR	SC	Open	IARI

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ICAR-INDIAN AGRICULTURAL RESEARCH INSTITUTE

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LIST OF SELECTED CANDIDATES FOR ADMISSION TO PH.D. PROGRAMME

AT IARI/IHR/ICAR

ACADEMIC YEAR 2016-17

Sl. No	Roll No.	Name	Category	Scheme	Institute
101	1600224	SHARANI CHOUDHURY	GEN	Open	IARI
102	1600158	PARICHITA PRIYADARSHINI	GEN	Open	IARI
103	1600098	JYOTSANA TILGAM	ST*	Open	IARI
104	1600247	SREESHMA N	OBC	Open	IARI
105	1600015	ALKA BHARATI	SC	Open	IARI
106	1600110	KISHOR UTTAMRAO	SC	Open	IARI
107	1600114	KULDEEP KUMAR	OBC	Open	IARI
108	1600055	DEEPANSHU JAYASWAL	OBC (TR)	Open	IARI
109	1600120	MAHENDRA C	ST	Open	IARI
<b>17 - NEMATOLOGY</b>					
110	1700005	MANORANJAN DASH	GEN	Open	IARI
111	1700012	VINAYKUMAR B K	OBC*	Open	IARI
112	1700003	DEVARAJA K P	SC	Open	IARI
113	1700013	VINOD S	OBC	Open	IARI
114	1700011	VIKAS	GEN	ICAR Inservice	IARI
115	1700006	MAYA PATIL	OBC	Open	IARI
<b>18 - PLANT GENETIC RESOURCES</b>					
116	1800006	HARI PRASATH S	OBC*	Open	IARI
117	1800012	KUWARDADRA SAHADEO	OBC*	Open	IARI
118	1800008	JAGDISH GOYANKA	GEN	Open	IARI
119	1800019	SHEPHALIKA AMRAPALI	GEN	ICAR Inservice	IARI
120	1800021	SHIVAM KUMAR	OBC*	Open	IARI
121	1800003	BHARGAVI H A	OBC	Open	IARI
122	1800022	SHYAM KUMAR	SC	Open	IARI
<b>19 - PLANT PATHOLOGY</b>					
123	1900137	VEENA K H	OBC*	Open	IARI
124	1900095	RAMYASHREE DEVI GS	OBC*	Open	IARI
125	1900112	SAURABH KUMAR DUBEY	GEN	Open	IARI
126	1900071	N. S. KALAIYANAN	OBC	Open	IARI
127	1900128	SUNIL KUMAR SUNANI	SC	Open	IARI
128	1900070	MUSHINENI ASHAJYOTHI	OBC	Open	IARI
129	1900099	RUBIN DEBBARMA	ST	Open	IARI
130	1900117	SHAZIA TASNEM	OBC (TR)	Open	IARI
131	1900122	SHWETA MESHAM	SC	Open	IARI
132	1900077	NILENDRA NARAYAN SINGH	ST	FUS	IARI
133	1900100	RUDRAPPA K BANNIHATTI	PC (GEN)	Open	IARI

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ICAR-INDIAN AGRICULTURAL RESEARCH INSTITUTE

Ph.D. Exam 2016

LIST OF SELECTED CANDIDATES FOR ADMISSION TO PH.D. PROGRAMME

AT IARI/IHR/ICAR

ACADEMIC YEAR 2016-17

Sl. No	Roll No.	Name	Category	Scheme	Institute
134	2000036	NITIN SHARMA	GEN	Open	IARI
135	2000030	MILAN KUMAR LAL	GEN	Open	IARI
136	2000052	SHAMIMA PARVEEN	GEN	Open	IARI
137	2000024	LAKSHMI RAJ	OBC	Open	IARI
138	2000026	MAHESH MEENA	ST	Open	IARI
<b>21-1 - POST HARVEST TECHNOLOGY - POST HARVEST TECHNOLOGY FOR HORTICULTURAL CROPS</b>					
139	2110023	GAJANAN GUNDEWADI	OBC*	Open	IARI
140	2110065	SMRUTHI JAYARAJAN	OBC*	Open	IARI
141	2110009	ARCHANA T. JANAMATTI	OBC	Open	IARI
142	2110070	SUJAYASREE.O.J	GEN	Open	IHR
143	2110049	NISHI SINGH	GEN	Open	IHR
<b>21-2 - POST HARVEST TECHNOLOGY - POST HARVEST ENGINEERING AND TECHNOLOGY</b>					
144	2120059	SHAGHAF KAUKAB	GEN	Open	IARI
<b>22 - SEED SCIENCE AND TECHNOLOGY</b>					
145	2200028	SANJAY KUMAR	OBC*	Open	IARI
146	2200021	PRAVEEN S PATTED	OBC*	Open	IARI
147	2200024	RAJESH KUMAR SHARMA	GEN	Open	IARI
148	2200007	DHANUSH K S	GEN	Open	IARI
149	2200026	RAVI BHUSHAN PRASAD	SC	Open	IARI
150	2200008	DHANYA V G	OBC	Open	IARI
151	2200005	DAMODAR DAS	OBC (TR)	Open	IARI
152	2200033	SUSHMA P P	SC (TR)	Open	IARI
<b>23 - SOIL SCIENCE AND AGRICULTURAL CHEMISTRY</b>					
153	2300020	AVIJIT GHOSH	OBC*	Open	IARI
154	2300009	AMRESH CHAUDHARY	GEN	Open	IARI
155	2300025	CHIRANJEEV KUMAWAT	OBC	Open	IARI
156	2300011	ANIL KUMAR VERMA	SC	Open	IARI
157	2300075	RAVI KUMAR MEENA	ST	Open	IARI
158	2300032	DIBAKAR ROY	SC	Open	IARI
159	2300019	ATUL	PC (GEN)	Open	IARI
160	2300093	SUNIL B H	PC (OBC) (TR)	Open	IARI
<b>24 - WATER SCIENCE AND TECHNOLOGY</b>					
161	2400005	RAGHUKUMAR AS	GEN	Open	IARI
162	2400012	VIKASH KUMAR	OBC*	Open	IARI
163	2400007	RICHA PANDEY	GEN	Open	IARI

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ICAR-INDIAN AGRICULTURAL RESEARCH INSTITUTE

Ph.D. Exam 2016

LIST OF SELECTED CANDIDATES FOR ADMISSION TO PH.D. PROGRAMME

AT IARI/IHR/ICAR

ACADEMIC YEAR 2016-17

Sl. No	Roll No.	Name	Category	Scheme	Institute
<b>25 - FLOICULTURE AND LANDSCAPE ARCHITECTURE</b>					
164	2500044	SHISA ULLAS.P	OBC*	Open	IARI
165	2500047	VARUN MALLAIAH HIREMATH	GEN	Open	IARI
166	2500045	SHIVANI SINGH	OBC*	Open	IHR
167	2500010	ELANGAIVENDHAN A	SC	Open	IHR
168	2500026	MEBAKERLIN M. SHANGPLIANG	ST	DS	IARI
169	2500040	S.VIJAYAKUMAR	SC (TR)	Open	IHR
<b>26 - FRUIT SCIENCE</b>					
170	2600123	TANUSHREE SAHOO	GEN	Open	IARI
171	2600085	KULDEEP SINGH	OBC*	Open	IARI
172	2600080	KALURAM	SC*	Open	IHR
173	2600114	SAJANA S	GEN	Open	IHR
<b>27 - VEGETABLE SCIENCE</b>					
174	2700009	ARUNKUMAR B.	OBC*	Open	IARI
175	2700074	SHILPA DEVI	GEN	Open	IARI
176	2700032	JAYANTA JAMATIA	ST	Open	IARI
177	2700080	SIDDHAROOD MARAGAL	OBC*	Open	IHR
178	2700014	B.VANLALNEIHI	ST*	Open	IHR
179	2700064	SAHEB PAL	OBC*	Open	IHR
180	2700060	RAJASHEKHAR GOWDA R	OBC	Open	IARI
181	2700025	GURURAJ BASAYYA MATHAPATI	PC(GEN)	Open	IARI
182	2700056	PRADEEP KUMAR JATAV	SC (TR)	Open	IARI
183	2700049	NEHA YADAV	OBC	Open	IHR
184	2700043	MANPREET KOUR	OBC (TR)	Open	IHR
185	2700042	MANOJ KUMAR	OBC (TR)	Open	IHR
186	2700029	HEMANT GHEMERAY	SC (TR)	Open	IARI
187	2700034	KOLA MUTHAIAH	ST	Open	IHR
188	2700015	BABITA CHOUDHURY	OBC (TR)	Open	IHR
189	2700007	ARINDAM DAS	SC (TR)	Open	IHR

Note: 1. The results are provisional subject to the fulfillment of eligibility criteria laid down in the information bulletin

2. \* indicates seats under General Category filled by OBC/SC/ST candidates  
 3. (TR) indicates transferred seats within the category from unfilled OBC/SC/ST/PC  
 4. FUS: Faculty Upgradation Scheme for SAUs  
 5. DS: Departmental Scientific  
 6. PC: Physically Challenged



**B. CIAE, BHOPAL**

**Agri. Engineering**

1	Agri. Processing & Structures	3	1	1	1	1	3	6
2	Farm Power & Equipment	3	2	1	0	0	6	6
	<b>TOTAL</b>	<b>6</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>9</b>	<b>12</b>

3	1	1	1	1	0	0	6
3	0	1	0	1	1	0	4
<b>6</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>10</b>

**C. IHR, BANGALURU**

**Horticulture**

1	Floriculture And Landscape Architecture	1	1	1	0	0	3
2	Fruit Science	2	1	1	0	0	4
3	Vegetable Science	3	1	0	1	0	5

1	0	2	0	0	0	0	3
2	0	0	0	0	0	0	2
3	4	1	1	1	0	0	9

**Post Harvest Technology**

	PHT of Horticultural Crops	2	1	1	0	0	4
	<b>TOTAL</b>	<b>8</b>	<b>4</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>16</b>

2	0	0	0	0	0	0	2
<b>8</b>	<b>4</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>