



Notice for Admission to Ph.D. Program in the Department of Agronomy,  
Institute of Agricultural Science, University of Calcutta, 2024

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Applications are invited for admission to Ph.D. Program in the Department of Agronomy, Institute of Agricultural Science, University of Calcutta. Eligible candidates (criteria for eligibility are given below) can apply in the prescribed Application form attached herewith:

1. **Eligibility:** Master's degree in Agronomy.
2. **Number of vacancies: 3 (three)** vacancies exist in the Department of Agronomy for admission to Ph.D. considering the strength and availability of faculty members.
3. **Reservation:** Reservation policy in admission will be followed as per the West Bengal State Higher Educational Institutions (Reservation in Admission) rules, 2013.
4. **Requirement of Ph.D. Entrance Test:** Candidates for admission to the Ph.D. programme shall have a Master's degree in Agronomy with at least 55% marks in aggregate or its equivalent grade "B" in the UGC 7-point scale (or an equivalent grade in a point scale wherever grading system is followed) are eligible to apply. A relaxation of 5% of marks. from 55% to 50%, or an equivalent relaxation of grade, may be allowed for those belonging to SC/ST/OBC (non-creamy layer)/Differently-abled and other categories of candidates as per UGC Ph.D. Regulations, 2016.
5. **Mode of Exam:** The entrance test will be of 50 marks. The question pattern will be of objective type or short answer type. The Duration of the entrance test will be one hour. (Qualifying Marks for the Ph.D. Entrance Test will be 50%).
6. **Exemption from Ph.D. Entrance Test:** Those who have qualified in NET/GATE" or have obtained DST INSPIRE Fellowship would be exempted from the Ph.D. entrance test. They may directly submit a statement of purpose or research in brief and appear in the interview.
7. **Details of Ph.D. Entrance Test and Interview:**  
**Date & Time:** Ph.D. Entrance test followed by an interview (Research Eligibility Test) for Ph.D. programme in Agronomy will be held on 6<sup>th</sup> March, 2024 at 1 pm, and same day at 4 p.m. respectively.  
**Details of interview:** An interview will be held on 6<sup>th</sup> March, 2024 at 4 p.m., for entrance test qualified candidates as well as candidates having NET/GATE or have obtained DST Fellowship

Successful candidates will be eligible to register for their Ph.D. in Department of Agronomy.

**Venue:** Department of Agronomy, Institute of Agricultural Science, University of Calcutta,  
51/2, Hazra Road, Ballygunge, Kolkata, West Bengal-700019.

All candidates are requested to download the Application Form (given below) and submit the filled up **Application Form, Self-attested copy of relevant mark sheets, Proof of age and Certificate supporting reserve category, along with the receipt of deposition of Application Fee** of 100/- (One hundred only) paid through a challan obtainable in the College Street cash counter or through State Bank Collect online.

*Online payment process-*

- i) Click <https://www.onlinesbi.sbi/sbicollect/icollecthome.htm>
- ii) Type of corporate/institution – Educational Institutions. State of corporate /institution-WestBengal;
- iii) Educational institute name-CALCUTTA UNIVERSITY ONLINE PAYMENT.
- iv) Select payment category - Entrance fees for Ph.D. Program Law.
- v) Remarks-"Entrance fees for RET-2024, AGRONOMY"

and send within the due date to the Institute office or H.O.D. Department of Agronomy, Institute of Agricultural Science, University of Calcutta by 4<sup>th</sup> March, 2024.

**Last date for submission of dully filled in application form (with copies of all relevant documents) is 04/03/2024.**

The application form for admission is available below.

# **SYLLABUS FOR THE RESEARCH ELIGIBILITY TEST (RET) FOR Ph.D. PROGRAMME IN THE DEPARTMENT OF AGRONOMY**

## **1. Basic Principles**

Origin and distribution of field crops, Physical, chemical and biological factors affecting growth and development of field crops. Modern concepts of tillage. Cropping patterns and systems. Plant growth analysis. Plant population, sowing techniques, time and depth. Crop yield components.

## **2. Crop Ecology**

Environmental factors affecting distribution and adaptation of crops. Agro-ecological and agro-climatic regions. Ecological factors affecting crop growth. Crop yield and agro-meteorological relationships. Crop yields and ecological optima. Adverse climatic factors and crop productivity.

## **3. Weed Management**

Principles of weed management. Weed-classification, biology, ecology and allelopathy. Crop weed competition. Herbicides-classification, mode of action, selectivity and resistance. Persistence of herbicides in soils and plants. Application-methods and equipment. Biological weed control. bio-herbicides and myco-herbicides, Integrated weed management. Special weeds, parasitic and aquatic weeds and their management in crops, cropping systems, and non-cropped lands.

## **4. Water Management**

Soil-water-plant relationships. Soil moisture stress and plant growth. Modern concepts in irrigation management. Methods of determining water and irrigation requirements of field crops. Consumptive use of water and methods of computation including empirical formulae. Quality of irrigation water. Scheduling of irrigation under assured and limited water supply. Factors affecting water use efficiency. Water management in field crops and cropping systems. Methods of irrigation-merits and limitations. Conjunctive use of water.

## **5. Nutrient Management**

Concept of essentiality of plant nutrients, their availability, management and diagnostic techniques. Concepts of soil fertility and productivity. Organic matter and organic manures. Cropping systems and soil fertility relationships. Fertilizers, their classification, composition, mineralization, availability and reaction products in relation to crop nutrition. Principles and methods of fertilizer application. Fertilizer use efficiency in different situations. Integrated nutrient management.

## **6. Dryland Agriculture**

Crop selection criteria for drylands. Concept of intercropping/mixed cropping in drylands. Precipitation-collection, conservation and utilization. Crop production under moisture stress situations. Contingency crop planning for aberrant weather conditions. Use of mulches and transpiration suppressants, Fertilizer management in dryland crops. Cropping patterns and crop diversification in dryland.

## **7. Crop Production in Problem Areas**

Principles of field drainage. Excess soil water and plant growth. Cropping systems, patterns on poorly drained soils. Problem soils and their distribution in India. Management of acid, saline and alkali soils. Excess salt and water tolerant crops. Crop production techniques in problem soils.

## **8. Crop Production**

Crop production techniques for cereals, legumes, oilseeds, fibre crops, sugarcane, tobacco and potato crops including distribution, season, adaptability, climate, soil and water requirements, and component technology, quality characteristics, uses and seed production techniques.

## **9. Agricultural Statistics**

Frequency distribution, mean, media and mode, Correlation and response function. Tests of significance-t, f and chi; - square tests. Designs of experiments-basic principles, completely randomized, randomized block design, latin square split, strip, factorial and simple confounding designs.

## **10. Sustainable Land Use Systems**

Concept of sustainability. Alternate land use systems. Types, extent and causes of wastelands. Concept and types of agro-forestry systems. Bioenergetics of crop production systems.

**HEAD, Department of Agronomy**

# UNIVERSITY OF CALCUTTA



## Department of Agronomy, Institute of Agricultural Science, University of Calcutta Research (Ph.D.) Eligibility Test (RET)- 2024

### Application Form for the Admission Test of the Ph.D. Programme in Agronomy

- 1) Name (in Block Letters): \_\_\_\_\_
- 2) Date of Birth: \_\_\_\_\_
- 3) Father's Name: \_\_\_\_\_
- 4) Marital Status: \_\_\_\_\_
- 5) Whether SC/OBC/ST/Physically Challenged: \_\_\_\_\_
- 6) Nationality: \_\_\_\_\_
- 7) Address for Communication: \_\_\_\_\_  
\_\_\_\_\_
- 8) Phone No (Residence & Mobile): \_\_\_\_\_
- 9) E-mail ID: \_\_\_\_\_
- 10) Academic Qualifications:

S. No.	Name of the Examinations	Year	Board /University	Subjects taken	Div./Class	% of Marks

- 11) Whether qualified in NET/GATE/equivalent examination: \_\_\_\_\_

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Signature of the applicant with date