



University of Calcutta

Department of Plant Physiology

Departmental Committee has resolved the following points regarding the implementation of new Ph. D regulation in our department.

1. There are **4** vacancies in the Department for new Ph. D. students. The reservation of candidates will be followed as per the Government Act – The West Bengal State Higher Educational Institutions (Reservation in Admission) Act, 2013 and The West Bengal State Higher Educational Institutions (Reservation in Admission) Rules, 2013.
2. The **Research Eligibility Test (RET)** for the Ph. D programme will be held on 4th August, 2015 at 1 p.m.
3. The **RET** will be of 50 marks objective type test of 1 hr duration.
4. An interview will be held on 5th August, 2015 at 1 p.m. for **RET** qualified as well as NET/ GATE/ SET qualified candidates.
5. Successful candidates will be eligible to register for their Ph.D programme in the Department of Plant Physiology.
6. The last date for the submission of duly filled in application form alongwith application fees of Rs. 100/- to be submitted to the Head, Department of Plant Physiology on or before 3rd August, 2015.
7. **Eligibility** for Application : M.Sc.(Ag.) in Plant Physiology and/or allied subject.
8. The following format has been fixed for the coursework of the enrolled candidates for Ph.D. programme after which they will be awarded with a completion certificate.

Course Work : one semester course work of 20 credits

Review of his/ her own research topic:	=> 5 credit point.
Seminar presentation:	=> 5 credit point.
Seminar attendance:	=> 2 credit point.
Methodology, Instrumentation & Techniques Lectures:	=> 5 credit point.
Computation and statistical methods:	=> 3 credit point.



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Ph.D. Entrance Examination (Plant Physiology) : 2015

Procedure and eligibility :

The Ph.D. entrance test of 50 marks for the eligible candidates will be held twice (depending on the availability of candidate) in a year and the qualifying marks will be fixed at 40%. Candidates with at least 50% Marks obtained in M.Sc. (Ag.) in Plant Physiology (or allied disciplines subject to endorsement by the concerned Ph.D. Committee) from any UGC recognized University are eligible to appear in the Examination. Those who have qualified NET/GATE/SET or already obtained M.Phil degree would be exempted from the examination. They may directly submit a statement of purpose or research brief and appear in the interview.

Syllabus :

Principles of plant physiology - cell structure & functions with energy relations. Water relation in plants : uptake, transport & elimination of water. Photosynthesis and respiration.

Metabolism of carbohydrate, protein, lipid, nucleic acids and vitamins.

Structure, biosynthesis, role and mechanism of action of auxin, gibberellin, cytokinin, ethylene and abscisic acid, inhibitors, retardants, weedicides.

Physiology of crop growth & yield, growth analysis, Photorespiration, source-sink relationship in crop productivity.

Plant nutrition - Nutrient elements, their uptake, Mechanism of xylem and phloem transport. Assimilation of nutrients with special reference to nitrogen and sulphur.

Physiology of germination: dormancy and viability. Concept of seed vigour, seed invigoration. Physiology of tuber and bulb-formation, juvenility and senescence.

Physiology of flowering. Fruit growth, physiological and biochemical changes during ripening. Post- harvest physiology of fruits, climacteric rise.

Physiological effect of biotic and abiotic stresses on plants with special reference to temperature, drought, salinity & heavy-metals.