

Dr. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY, U.P., LUCKNOW
CENTRE FOR ADVANCED STUDIES
Ordinances for the Degree of
DOCTOR OF PHILOSOPHY (Ph.D.)

1. ELIGIBILITY FOR ADMISSION

1.1 Academic Qualifications

A candidate seeking admission to the Doctor of Philosophy (Ph.D.) programme at Centre For Advanced Studies (here-in after called as CAS), an in-campus institute of the Dr. A. P. J. Abdul Kalam Technical University, U.P., Lucknow (here-in after called as University) must hold qualifications mentioned against programme of study.

Sr. No.	Discipline	Academic Qualifications
1	Computer Science & Engineering	M.Tech. in Computer Science & Engineering / Information Technology/ Electronics and Communication Engineering with First Division or equivalent CGPA
2	Mechatronics & Automation	M.Tech. in Mechatronics/ Mechanical Engineering/ Electronics & Communication Engineering/ Manufacturing Technology/ Manufacturing and Automation/ Automation and Robotics/ Electronics Engineering/ Electrical & Electronics Engineering/ Electronics & Instrument Engineering/ Electrical Engineering/ with First Division or equivalent CGPA
3	Nano Science & Technology	* M.Tech. in Nanotechnology/ Aerospace Engineering/ Agriculture Engineering/ Biotechnology/ Computer Science and Information Technology/ Chemistry/ Electronics and Communication Engineering/ Electrical Engineering/ Instrumentation Engineering/ Metallurgical Engineering/ Petroleum Engineering/ Civil Engineering/ Physics/ Production and Industrial Engineering/ Textile Engineering and Fiber Science/ Polymer Science and Technology/ Food Technology/ Atmospheric-Oceanic Science and Technology/ Environmental Engineering/ Chemical

		<p>Engineering/ Material Science/ Mechanical Engineering with First Division or equivalent CGPA # M.Sc. in Physics, Chemistry, Biology and Mathematics with First Division or Equivalent CGPA with valid GATE score</p>
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N.B.:-

* Both B.Tech. - M.Tech. and B.Sc. - M.Sc. - M.Tech. combinations are eligible

Pre-requisite course credit requirements will be different for M.Sc. qualified students

Notwithstanding anything contained in above-mentioned rules the eligibility criteria will be as decided by the Academic Council/ Executive Council of the University from time to time.

1.2 Transfers from Other Universities

- (a) A candidate who has been admitted in (or has registered for) Ph.D. degree programme in any other recognized university and meets the requisite qualifications for admission to Ph.D. programme of the CAS as prescribed in clause (1.1) may be allowed to transfer his/her admission to the CAS provided
 - (i) he/she provides a no objection certificate from the previous university,
 - (ii) the concerned Selection Committee and the RDC recommend, and
 - (iii) the Academic Council of the University approves the transfer.
- (b) Further, the extent of transfer of credits earned towards pre-Ph.D. courses, publications and progress of research etc. by the candidate at the previous university to the CAS of the University shall be decided by the respective RDC of the CAS.
- (c) In such cases of transfer, the date of admission in the CAS shall be decided by the respective RDC in view of the date of admission/registration in the previous university and the extent of academic achievements. The candidate shall be required to fulfill the remaining requirements as decided by the respective RDC of the CAS.
- (d) The candidate shall deposit the requisite application and other fees to the CAS.

2. ADMISSION PROCESS

2.1 Announcements and Application

- (a) **Announcements**

Applications for admission to Ph.D. programmes of the CAS shall be

invited by the CAS through national level advertisement and through announcement at its website. The admission process will generally be carried out twice a year (in the First semester beginning July/August and in the Second Semester beginning January).

(b) Application

A candidate seeking admission to Ph.D. programme at the CAS shall download the prescribed application form from the website of the CAS (<http://cas.res.in>) and send the completed application form along with documents to the CAS at the address mentioned in the announcement and/or application form. The application form may also be filled in on-line if and when so announced and/or advised by the CAS. The candidate must indicate the field of research to which the admission is being sought.

(c) Relaxation

Relaxation of 5% marks or an equivalent relaxation of grade may be allowed to SC/ST/OBC (Non-creamy layer)/ differently abled candidates).

(d) Scrutiny of Application Forms

The application forms received may be scrutinized by a Screening Committee constituted by the Director, CAS.

2.2 Written Test, Interviews, Registration and Enrollment

(a) Written Test and Interview

The selection of candidates for registration shall be made based on written test followed by interview. There shall be a committee constituted by the Director, CAS to organize and conduct the written test, evaluate the test results and to decide the cutoff scores for short listing the candidates for interview. The dates of written test for respective fields will be announced through the website of the CAS. The shortlisted candidates eligible for interviews will be informed through website of the CAS.

(b) Interview

The shortlisted candidates shall be required to appear for interview before a Selection Committee on the date(s) announced through the website of the CAS. The Selection Committee shall be constituted by the Director, of the CAS for each field as given in clause 2.2(c). The candidates based on their overall performance will be categorized as selected or not selected for registration. The list will be submitted to the Director, CAS for approval. After Approval the list of candidates selected for

registration will be announced through the website of the CAS.

(c) Selection Committee

The Selection Committee for each discipline shall consist of the following members:

(i)	Vice- Chancellor	Chairman
(ii)	The Director, CAS In absence of Director, CAS, Dean (Academics, CAS) will be the Convener and in absence of Dean (Academics, CAS) a Professor (or Associate/Assistant Professor in case there is no one holding Professor rank) belonging to CAS and to be pre-nominated by the Director, CAS	Convener
(iii)	Two experts of the concerned discipline not below the rank of Professor from CAS. In absence of Professor, faculty of the concerned discipline, based on the recommendation of Dean (Academics), CAS and the Coordinator of that research program belonging to the CAS to be pre-nominated by the Director, CAS	Member
(iv)	One external expert of the concerned field not below the rank of Professor or Associate Professor in absence/unavailability of Professor in that particular research discipline based on the recommendation of the Dean (Academics) and the Coordinator of that research discipline, to be pre-nominated by the Director, CAS	Member

(d) Registration

A candidate recommended by the Selection Committee based on interview shall be allowed for registration in the Ph.D. programme. The candidate shall deposit registration form (Appendix- II) and other fees as

prescribed by the CAS (Appendix-I) within the date announced by the CAS failing which their admission may be cancelled. The date of registration shall be the date on which a candidate submits duly completed registration form and requisite registration fee.

Some of the major requirements are listed below:

No.	Particulars
1*	A prescribed non-refundable application fee (See Appendix - I).
2*	High School (class X) Certificate with Date of Birth.
3	SC/ST/OBC/PH certificate (if applicable).
4*	Copies of degrees, marks/grade sheets of all the examinations passed (not the originals).
5	Copies of publications (if applicable).
6	Two letters of reference.
No. of Enclosures:	
No. of Sheets:	

Note: (*) means these documents are compulsorily required by all the applicants

(e) Cancellation of Registration

If a candidate fails in the Comprehensive Examination twice or research proposal of a candidate is rejected thrice by the RDC and RDC is of the opinion that the candidate cannot complete Ph.D. work within the stipulated time, then, on recommendation of RDC, the Director, CAS may cancel the registration.

(f) Enrollment

A candidate registered in any Ph.D. programme of the CAS shall be allowed for enrollment in the University. He/she shall be required to submit Ph.D. Enrollment Form along with the necessary documents and enrollment fee (see Appendix -III) to the Office of the CAS. After due processing, the candidate will receive the University enrolment number and Ph.D. roll number.

3. PRE-Ph.D. COURSES

3.1 Scope and Objectives

In order to strengthen the background in the chosen field of research and to develop a sound research temperament, a candidate admitted to Ph.D. programme is required to undertake and successfully complete pre- Ph.D. courses of post graduate (M.Tech.) level. The minimum number of credits required for candidates with a M.Tech. degree will be at least 6 credits. The minimum number of credits required for candidates with a M.Sc. degree will be at least 18 credits.

The candidate will be required to pay the required course fee as prescribed by

the CAS from time to time.

3.2 Number and Nature of Courses

Candidate(s) admitted shall have to complete at least two/six pre-Ph.D. courses of M. Tech. level based on their admission eligibility (two for M.Tech degree holders/six for M.Sc degree holders) on suggestion of the Thesis Supervisor(s) within one year among the courses offered in PG programmes of the CAS in addition to a course on 'Research Methodology'. Depending upon the research interest of the candidate, the thesis Supervisor may suggest candidate to audit one or more course(s). The nature and type of courses shall be based on background and research plan of the candidate. The pre-Ph.D. courses shall be full credit courses equivalent to one-semester PG courses with regular contact sessions, home assignments, practical sessions wherever applicable, and mid-term tests and end semester theory/practical examination

The candidate will submit application on prescribed pro-forma (Appendix-IV) giving names of pre-Ph.D. courses to be audited duly recommended by the supervisor(s) to the Dean (Academics), CAS. The candidate will be allowed to audit pre-Ph.D. courses only after due notification from Dean (Academics), CAS.

4. COMPREHENSIVE EXAMINATION

- 4.1 To test the overall competence and academic preparation of the candidate in the PhD Programme, a Comprehensive Examination will be held within 18 months from the date of admission. The examination will be conducted by CAS and Coordinated by the Supervisor.
- 4.2 Comprehensive Examination Committee for this purpose will be the same as the Research Degree Committee (RDC) except no external experts. The Committee may co-opt other CAS members as needed.
- 4.3 Comprehensive Examination of a candidate will be held only after successful completion of pre-Ph.D. courses. The performance of a candidate may be evaluated on the basis of written examination or viva-voce or both based on recommendation by the RDC. The date and syllabus of the Comprehensive Examination will be informed to the candidate at least one month prior to the date of examination. A candidate failing in the Comprehensive Examination in first attempt will be given a chance to take a second attempt not before one month and within six months from the date of the first attempt. If a candidate fails also in the second attempt, he/she is not allowed to continue in the PhD programme. All cases of failure of candidates shall be reported to the Director, CAS for necessary action.

5. RESEARCH PROPOSAL

Approval of Research Proposal

Within three months of the successful registration of candidate at CAS for Ph.D programme the candidate's RDC shall Examine the research proposal of the

proposed Ph.D. work of registered candidate and satisfy itself that the proposed topic is one on which the Ph.D. work can be pursued under the guidance of the proposed supervisor(s), and that the adequate facilities and equipment's for the work do exist at the CAS or varsities/organizations having collaborations/MoU with CAS. The candidate shall also be required to present his/her research proposal on a format (Appendix-V) giving outcome of literature survey, main objectives and research plan before the RDC.

If Ph.D. topic/research proposal of a candidate is rejected thrice by the RDC and RDC is of the opinion that the candidate cannot complete Ph.D. work within the stipulated time, then RDC may recommend for cancellation of registration.

6. THESIS SUPERVISOR(S)

6.1 Eligibility for Ph.D. Thesis Supervision /Co-Supervision

(a) Eligibility

A person shall be eligible to act as a supervisor provided he/ she holds a Ph.D. degree in the concerned or related field has good publications in reputed scientific/ technical journals, and who is one of the following:

- (i) Director, Professor, Associate Professor and Assistant Professor of the CAS.**
- (ii) A Visiting Faculty (like centrally funded DST-INSPIRE Fellow Faculty and Ramanujan Fellow Faculty) who is appointed for Not Less Than Five Years at CAS based on the recommendation both by The Director, CAS and the respective RDC and approved by the Vice-Chancellor.**
- (iii) In case of topics which are of interdisciplinary in nature co-supervisor from reputed institutions, like IITs, IISc, IIITs, NITs, state funded institutions or research establishments, private research establishments of repute, CSIR laboratories or University departments may be taken on recommendation of respective RDC.**
- (iv) A Visiting Faculty appointed for at CAS for at least three years may be considered as Co-supervisor based on the recommendation both by The Director, CAS and the respective RDC.**

(b) Exception

In case a person in a particular field has no Ph.D., degree but possesses reputed research publications/patents and belongs to a reputed research institute/organization, he/she may be nominated as a supervisor by the RDC and Director, CAS with the approval of Vice-Chancellor, AKTU relaxing the requirements mentioned in clause 6.1(a).

(c) Non-Eligibility

A person, who is registered for a Ph.D. degree shall not be eligible to act as a supervisor in any field of the CAS.

(d) Database of Ph.D. Thesis Supervisors

For the purpose of evolving a long-term research and development policy, the respective RDCs shall prepare a database of eminent researchers in various fields by inviting/collecting detailed bio-data of experts from the affiliated colleges/institutions, IITs, IISc, IIITs, NITs, State funded Institutions and Universities, which shall be approved by the Director, CAS.

(e) Inclusion of a New Person as Thesis Supervisor

A person duly approved by the Director, CAS on the recommendations of the Dean Academics and the respective RDC shall be eligible to act as a supervisor. The candidate enrolled in the Ph.D. programme, with the consent of the Thesis Supervisor, may suggest the name of a new person to act as a Co-supervisor. The suggestion shall be accompanied with two copies of the curriculum vitae of the person proposed, along with his/her consent and the consent of the head of organization and duration of availability, for approval of the RDC.

(f) Maximum Number of Ph.D. Thesis Supervision

The maximum number of enrolled candidates that can be supervised by a supervisor at any particular time, singly or jointly with some other person, shall be four for Assistant Professor, five for Associate Professor and eight for Professor. In special situations, up to a maximum two additional candidates can be permitted on the specific recommendations of the concerned RDC and subsequent approval by the Director, CAS.

6.2 Change of Ph.D. Thesis Supervisor - Substitution and Inclusion

(a) Maximum Number of Ph.D. Thesis Supervisor

A candidate shall normally not have more than two supervisors. In exceptional/essential cases, one additional supervisor may be permitted on the specific recommendations of the concerned RDC and subsequent approval by the Director, CAS.

(b) Substitution of a Supervisor

In case a duly approved supervisor later on ceases to act as the supervisor by virtue of his/her retirement or transfer or otherwise, the candidate may be permitted to choose another supervisor provided the relevant criteria in clause 6.1 are satisfied. The application by the candidate is made on the prescribed Pro-forma as given in Appendix - VI) with the consent of the proposed supervisor. Such change can be permitted on the specific recommendations of the concerned RDC and subsequent approval by the

Director, CAS.

(c) Induction of an Additional Supervisor

In case during the course of research, it is felt by the candidate or by the existing supervisor(s) or by the RDC, that a particular expertise is additionally needed for the ongoing research, then, a new supervisor can be inducted with the requisite expertise, and the eligibility criteria mentioned in clause 6.1. The application by the candidate will be made on the prescribed Pro-forma as given in Appendix - VII with the specific recommendations of the present supervisor(s) and the consent of the proposed supervisor. Such change can be permitted on the specific recommendations of the concerned RDC and subsequent approval by the Director, CAS.

(d) Minimum Duration of Supervision

A supervisor substituted or inducted at a later date should be associated with the research of the candidate for a period of at least one year prior to the thesis submission.

7. RESEARCH DEGREE COMMITTEE (RDC)

7.1. Constitution and Functioning of RDC

(a) Constitution

Within one month after the successful registration of candidate at CAS for Ph.D programme there shall be a separate Research Degree Committee (RDC) formation for each candidate belonging to different discipline of research of the CAS with the following constitution.

(i)	Vice- Chancellor, AKTU (in his absence Director, CAS)	Chairman
(ii)	Convener of RDC should be the Director, CAS. In his absence Dean (Academics), CAS (in his absence the Coordinator/Head of that particular discipline of research)	Member
(iii)	Supervisor(s)	Member
(iii)	One expert of the subject in the concerned area normally Professor (In its absence, an Associate Professor or an Assistant Professor if there is no one of Associate Professor rank of the concerned area) belonging to the CAS, to be nominated by the Director, CAS	Member

	based on the recommendation of Dean (Academics), CAS and the primary Supervisor	
(v)	Normally one expert but can be exceeded up to the extent of two expert of the Professor or equivalent rank (e.g., Senior Scientist) or Associate Professor or equivalent rank) in case of unavailability of Professor rank or Assistant Professor in case of unavailability of Associate Professor in that particular candidate's specific relevant research area to be nominated by the Director, CAS based on the recommendation of Dean (Academics), CAS and primary Supervisor looking into the need of a particular RDC	Invited Member

- (b) The RDC of a discipline will meet as and when required (normally twice a calendar year) in each academic session at regular intervals.
- (c) Half of the members of the RDC shall form the quorum for the meeting. However, presence of one external expert is essential in the meeting.
- (d) The minutes of the RDC meeting shall be placed before the Vice-Chancellor after being recommended by the Director, CAS for approval.
- (e) If the Chairman is unable to attend a meeting, the Director, CAS shall act as the chairman. If Director, CAS is also not present, then, the Dean (Academics) or in his absence the Convener shall act as the Chairman.

7.2. Functions of RDC

Each RDC shall perform the following functions:

- (a) **Approval of Research Proposal**
The RDC shall Examine the research proposal of the proposed Ph.D. work of registered candidates and satisfy itself that the proposed topic is one on which the Ph.D. work can be pursued under the guidance of the proposed supervisor(s), and that the adequate facilities and equipment's for the work do exist at the CAS.
If Ph.D. topic /research proposal of a candidate is rejected thrice by the RDC and RDC is of the opinion that the candidate cannot complete Ph.D. work within the stipulated time, then RDC may recommend for cancellation of registration.
- (b) **Monitoring of Research Work**

The RDC will progressively review the research progress of each candidate and advice on general/specific directions to be followed to meet the research objectives of the CAS as per provisions of clause 8.1. Accordingly, the RDC may suggest at the initial stage or even at later stages, change(s) in the topic of research, contents of research proposal, and finally in the title of the thesis topic, etc. A candidate is required to present the research progress along with research paper publications in the prescribed journals on a format given at appendix-VIII in the scheduled RDC meeting. If a candidate could not present his/her research progress in the scheduled RDC meeting due to some genuine reasons, but the progress report sent by the supervisor is satisfactory, he / she may be permitted to continue. In case a candidate does not turn up for presentation in the RDC meeting on two consecutive reviews, his / her registration may be cancelled.

(c) Recommendation for Change and/or Inclusion of Supervisor(s)

The RDC, upon receiving request for change or inclusion of a thesis supervisor by a candidate as per format given in Appendix -VI and/or Appendix - VII, endorsed by the supervisor(s), shall make its recommendations to the Director, CAS as per provisions of the clauses 6.1 and 6.2.

(d) Recommendation for Extension of Duration

The RDC, upon receiving request for extension of duration of Ph.D. programme by a candidate as per format given in Appendix - IX, endorsed by the supervisor(s), shall make its recommendations to the Director, CAS as per provisions of the clause 8.

(e) Recommendation for Thesis Submission

The RDC, in one of its review meetings, after ascertaining satisfactory course and research performance and fulfillment of the necessary requirements, such as publications, etc. by the candidate and upon receiving a certificate from Thesis Supervisor(s) as per format given at (Appendix-X) will recommend along with the necessary suggestions/instructions as per format given in Appendix -XI, for the preparation and submission of Research Summary and writing of the thesis, as per provisions of clause 10.

(f) Building up Research and Development Efforts at the University

The RDC will periodically summarize its experiences and provide the input and feedback to the Director, CAS for modifications and inducting new research directions and also about the procedures of Ph.D. governance to enrich and strengthen the research efforts of the CAS. It

will also give its suggestions to create the databases about the subject experts for thesis supervision and evaluation, journals for publication by the candidates.

8. DURATION OF Ph.D. PROGRAMME

(a) Minimum Period for Ph.D. Thesis Submission

The minimum period for submission of Ph.D. thesis for a candidate shall be three years.

(b) Resetting of the Duration

A candidate may be allowed to modify the proposal of his/her research work with the approval of the concerned RDC, but in that case he/she shall not submit his/her Ph.D. thesis before the expiry of at least six months from the date of approval for such a change.

(c) Extension of Duration and Maximum Period

The maximum period permitted for submission of Ph.D. thesis for a candidate shall normally be five (5) years from the date of registration. In special circumstances, a maximum extension of two years in installments of six months can be granted by the Director, CAS on the recommendations of the Dean (Academics, CAS) and the candidate's RDC after making careful scrutiny of the candidate's progress. The candidate shall apply for the extension of period on the pro-forma as given in Appendix - IX. It shall be essential for a candidate to submit thesis within the stipulated time period from the date of registration, otherwise, the registration shall automatically be cancelled after the expiry of the due date. Exceptional cases of more than 7 years shall be placed before the Director, CAS to put up in the Academic Council of the University for appropriate action. No more extension shall be provided in any circumstances after the due date.

- (d)** On recommendation of the concerned candidate's RDC, the candidate shall be allowed to submit his/her Ph.D. Thesis and Dean (Academics), CAS will permit the candidate to submit Research Summary and the Thesis.

9. Place of Ph.D Work

The primary place of work for all candidates shall be the CAS only. The candidate can be permitted to avail/use facilities relevant to their research at a different place with a period NOT totaling more than one (1) year during full duration of their Ph.D program.

10. THESIS PREPARATION AND SUBMISSION

10.1 Scope and Objective of Ph.D. Thesis

The Ph.D. thesis is an important academic document that reflects the research aspirations and has an infinite life time. It is expected, therefore, to comply with the following general conditions:

- (a) It must be a piece of research work characterized by the discovery of facts or by fresh approach towards interpretation of theories. In either case, it should exhibit the candidate's capability for critical examination and sound judgment.
- (b) It should aim at providing the solutions for the problems related to wellbeing of society and mankind at large.
- (c) It should be accepted and respected nationally as well as internationally for its quality work.
- (d) It should also be satisfactory as far as its literary presentation is concerned.
- (e) The thesis shall be prepared in the prescribed format and specifications as given in the "Guidelines for Preparation of Ph.D. Thesis" of the CAS applicable at the time of submission of the thesis.

10.2. Pre-Submission Requirements

(a) Publications in International Journals

It is presumed that a candidate would endeavor to present quality work in the thesis leading to get the results published in at least two journals of international repute from the indicative list made available at the CAS website which will be updated periodically based on Thomson Reuter impact factor. Wide spread acceptance of the work via publications in magazines of international repute will also be given due consideration. The RDC will give due consideration on this point before recommending for submission of thesis. It may also not accept the publications appearing in the journals of low relevance to the field of research or in the journals of non-SCI/non-Scopus/non-Web of Science standard.

(b) Pre-Submission Presentation

A candidate shall have to deliver a full presentation of the total work in one of the RDC meetings before submission of Ph.D. thesis. The RDC may (i) recommend for submission (ii) suggest revisions to be carried out to the satisfaction of supervisors(s) and submit, or (iii) suggest revisions to be carried out and re-deliver the presentation in its subsequent meeting.

(c) Certificates from the Supervisor(s)

The thesis shall be accompanied with a certificate issued by the

supervisor (s) stating the following (see also "Guidelines for Preparation of Ph.D. Thesis") on the format as given in Appendix – X.

- (i) That the thesis embodies the original work of the candidate. Thesis has been checked for originality and an originality report generated from anti-plagiarism software (e.g. Turnitin) is enclosed. The thesis has not been earlier submitted for any Degree or Diploma.
- (ii) That the candidate worked under him/them for the period prescribed by the RDC.
- (iii) That he/she has put in not less than 200 days of attendance
- (iv) That the thesis fulfils the requirements of the clause 8.

(d) Permission for Submission

On recommendation of the RDC a candidate shall be allowed to submit his/her Ph.D. Thesis and Dean (Academics), CAS will permit the candidate to submit Research Summary and the Thesis.

10.3. Thesis Preparation

(a) Ph.D. Thesis Preparation Guidelines

After recommendations of the concerned RDC and subsequent permission of the Dean (Academics), CAS, the candidate shall start writing the thesis in consultation with the supervisor(s). The candidate is required to follow the guidelines for preparation of Ph.D. Thesis

(b) Language

The medium of expression for the thesis shall be English language. The use of Hindi language as a medium of expression, if desirable, shall be permitted after the specific permission of the Director, CAS.

(c) Research Summary

Based on the research and the draft of the Thesis, a candidate shall prepare a Research Summary in consultation with the supervisor(s). (See the "Guidelines for Preparation of Ph.D. Thesis" of the University)

10.4. Thesis Submission for Evaluation

- (a) The Thesis and Research Summary duly prepared as per guidelines provided in "Guidelines for Preparation of Ph.D. Thesis" of the CAS in consultation with supervisor(s) will be allowed for submission.
- (b) The candidate shall fill the checklist and sign the Certificate of Thesis Submission for Evaluation according to "Guidelines for Preparation of Ph.D. thesis". No part of the thesis shall be copied from any other source. Due credit to other researchers shall be given in the thesis. The candidate shall enclose a certificate from the Supervisor(s) (Appendix-X). The Certificate, as given in

Appendix – XII, should be signed by the candidate and countersigned by the supervisor(s), and submitted to the Dean (Academics), CAS office in duplicate. One copy after stamping by the concerned Dean (Academics), CAS office with due entries will be returned to the candidate.

- (c) For evaluation purposes, a candidate for Ph.D. degree is required to submit
 - i. four hard copies of Research Summary preferably one month in advance of thesis submission.
 - ii. four hard copies of the thesis printed on both sides and spiral bound.
- (d) CD/DVD with exactly identical contents in pdf format. The candidate should ensure that the CD/DVD can be opened on any system. The contents of the CD/DVD should also be e-mailed to the CAS office in-charge.

11. THESIS EVALUATION BY EXAMINERS

11.1. Appointment of Examiners

The appointment of thesis examiners shall be made in the following manner:

- (i) The supervisor(s) will prepare a panel of eight (8) experts (four (4) each from India and abroad) qualified to examine the thesis. Similarly, the convener RDC will also prepare to a panel of eight (8) experts (four (4) each from India and abroad). The proposed thesis examiners should be from reputed institutions and should actively be involved in the relevant research area of the candidate. Both the panels will be sent to the Dean (Academics) of the CAS. Out of both panels of examiners, the Director, CAS, on suggestion of the Dean (Academics) at his discretion, will appoint two examiners other than the supervisor(s), one from India and one from abroad to whom the thesis will be sent for evaluation.
- (ii) If the convener RDC is the supervisor or one of the supervisors, the chairman of the RDC shall request another RDC member to provide the panel of thesis examiners.
- (iii) If the Director, CAS is the supervisor or one of the supervisors, the appointment of examiners shall be made by Dean (Academics), CAS. In the case of Dean (Academics), CAS, happens to be the supervisor/s, the Convener will appoint the examiners and monitor the evaluation process.

11.2 Process of Evaluation of the Thesis

A copy of the Research Summary shall be sent to both the external examiners for their consent. In case any examiner expresses his/her inability to evaluate thesis, the Director, CAS will appoint alternate examiner from any of the two panels. In the event of several examiners

declining to evaluate the thesis, a set of fresh panels will be obtained from the supervisor(s) and the convener RDC following clause 11.1. On receiving the consent, the thesis shall be sent to both the examiners. Normally, two months' time shall be given to the examiners for submitting the evaluation report. The maximum extension given to any examiner shall be one month, failing which the Director, CAS may appoint alternate examiner(s).

11.3. Evaluation Report

The examiners shall specifically report on the prescribed Proforma (as given in the Appendix - XIII) whether the thesis fulfils the requirements of the clause 10.1 or not. They shall clearly recommend one of the following:

- (i) (Acceptable) The thesis is acceptable as it is.
- (ii) (Acceptable after Minor Technical Revisions/Language Corrections). The thesis is acceptable after minor revisions as specified in the evaluation report, to the satisfaction of the Viva-Voce examination board.
- (iii) (Major Technical Modifications and Re-evaluation) The thesis needs major technical improvements/modifications which must be carried out to the satisfaction of examiner(s) before it is recommended for acceptance.
- (iv) (Rejected). The thesis is rejected as it does not meet the minimum standards.

11.4. Processing of Evaluation Reports

- (i) If both the external examiners approve the thesis (clause 11.3[i]), the Viva-Voce examination will be conducted as per provisions of clause 12.
- (ii) If one external examiner approves the thesis as submitted (clause 11.3[i]) and the other external examiner recommends minor revisions (clause 11.3[ii]), or both the external examiners recommend minor revisions (clause 11.3[ii]); the comments of the examiner(s) recommending revisions shall be sent to the supervisor(s) and to the candidate without disclosing identity of the thesis examiner(s) for the necessary clarifications / comments and revisions. The candidate is required to incorporate the suggested revisions and submit the revised thesis and a response sheet to the CAS indicating point by point how the suggested revisions have been responded/ incorporated. The revisions and response sheet are required to have the endorsements of the supervisor(s). On receipt of the response sheet, the Viva-Voce examination will be conducted. The examiner's comments and candidate's response sheet shall be placed before the Viva Voce

examination board.

- (iii) If one external examiner recommends minor revisions (clause 11.3[ii]), and the other external examiner recommends major revisions (clause 11.3[iii]), or both the external examiners recommend major revision (clause 11.3[iii]); comments of both the examiners shall be sent to the supervisor(s) and to the candidate without disclosing identity of the thesis examiners for the necessary clarifications/comments and revisions. The candidate is required to incorporate the suggested revisions and submit the revised thesis and a response sheet to the Dean (Academics), CAS office indicating point by point how the suggested revisions have been responded to and incorporated into the thesis. The revisions and response sheets are required to have the endorsements of the supervisor(s). On receipt of the responses related to both minor and major revisions and the revised thesis from the candidate, both the comments related to minor and major revisions and the corresponding response sheets and the revised thesis will be sent to the examiners recommending for re-evaluation. The subsequent processing will be done after receiving the comments from the examiners. In the event of acceptance of the revised thesis by the external examiners, the Viva-Voce examination will be conducted. Comments of both the examiners, candidate's response sheets and the revised thesis shall be placed before the Viva Voce examination board.
- (iv) If any one of the two examiners reject the thesis (clause 11.3 [iv]), and the other recommends (clause 11.3[i], [ii] or [iii]), then the thesis shall be sent to a third examiner for re-evaluation. If the report of the third examiner is any one of the 11.3 ([i], [ii], or [iii] , then the thesis with the recommendations of both examiners is processed as given in clauses 11.3 (i),(ii),(iii),(iv). However, if the third examiner also rejects the thesis (clause 11.3 [iv]), the thesis shall be rejected.
- (v) If both the external examiners reject the thesis (clause 11.3)[iv]), the thesis shall be rejected.

11.5. Major Revision of the Thesis

If a candidate is required to revise the thesis under clause 11.3[iii], the Director, CAS may permit the candidate to revise his/her thesis and submit to the Dean (Academics), CAS office in a period not earlier than six months and within nine months from the date of communication to the candidate. The candidate shall have to pay an additional examination fee as prescribed by the CAS for re-submission of his/her thesis.

11.6. Evaluation of Revised Thesis

The revised thesis shall normally be examined by the old set of examiners provided they agree for re-evaluation. If any one of the examiners rejects the thesis, or an examiner does not agree for re-evaluation of the revised thesis, another examiner will be appointed according to the clause 11.2 from the panels. The consent of the examiner shall be obtained by sending a copy of the detailed Research Summary. The examiners shall be requested to clearly recommend whether the thesis is approved or rejected.

11.7 Re-submission of Thesis after Rejection

The candidate shall be informed about the rejection of thesis. In case, the candidate is further interested to continue research work he/she will submit an application to the Dean (Academics), CAS for granting permission. On getting permission from the Director, CAS the candidate will continue research work taking into consideration of comments and suggestions of all the examiners. The candidate will be allowed to submit his/her thesis following ordinance clause 10.4.1 after one year from the date of permission granted (with satisfaction to ordinance clause 8 (b)).

12. VIVA-VOCE EXAMINATION

12.1. Announcement

Once the thesis is accepted (clause 11.1[A] and/or [B]), a Viva-Voce examination for the candidate shall be arranged and corresponding announcements will be made.

12.2. Viva-Voce Examination Board

12.3. The Board for viva-voce shall comprise of:

- (i) One Indian examiner who approved the candidate's RDC. If the Indian examiner is not available, the Director, CAS may nominate another Indian examiner from the pre-nominated member panel of that particular discipline.
- (ii) One/two members shall be nominated by the Director, CAS from institutions/ research establishments of repute.
- (iii) The supervisor(s) (Internal Examiner).

12.4. Recommendations

The Viva-Voce Board shall make the final and a clear recommendation (see the Pro-forma as given in Appendix - XIV whether the candidate

- (i) be awarded Ph.D. degree, or
- (ii) be asked to re-appear for a Viva-Voce examination, or
- (iii) the thesis is rejected.

12.5. Re-examination

In case of recommendation of re-examination (clause 12.3(ii)), the candidate shall be required to re-appear for a Viva-Voce examination before the same Board but not earlier than three months from the date of Viva-Voce examination.

13. FINAL SUBMISSION

After the successful completion of Viva- Voce Examination and with approval of the Viva Voce Board, the candidate should finalize the thesis incorporating all the suggestions made during the evaluation process by the internal and external examiners and the suggestions emerging during Viva-Voce Examination including modifications, if any, in the title of the thesis.

Following should then be submitted (see "Guidelines for Preparation of Ph.D. Thesis"):

(a) **Certificate and Undertaking**

Certificate of Final Thesis Submission, as given in Appendix - XV, signed by the candidate and the supervisor(s) certifying that all the corrections suggested by the examiners have been incorporated and the thesis has been prepared as per "Guidelines for preparation of Ph.D. Thesis".

(b) **Printing and Binding**

The final thesis should be printed and bound as per instructions given in the "Guidelines for Preparation of Ph.D. Thesis".

(c) **Number of Copies**

Two copies incorporating all corrections including suggestions during Viva-Voce Examination printed on both sides and hard bound as per the instructions given in the "Guidelines for Preparation of Ph.D. Thesis".

(d) **Electronic Copy**

For electronic repository of the CAS, a CD/DVD with exactly the identical contents as in the final thesis in .pdf format should also be submitted to CAS office and the Central Library. The candidate should ensure that the CD/DVD can be opened on any system. The CD/DVD should carry the name, enrollment number and programme/discipline of study of the candidate.

14. Award of Ph.D. Degree

The candidate shall be awarded Ph.D. degree with recommendations of the Academic Council on the report of the Board of Viva-Voce examination and the approval of the Executive Council. However, the candidate may be issued a Provisional Degree Certificate (see the format as given in Appendix - XVI if the Academic Council recommends the candidate for the award of Ph.D. degree.

14.1. The award of Ph.D. degree can be withdrawn in case the thesis submitted by

the candidate is found to contain false or pirated results, or the candidate has been found to be involved in plagiarism. The procedures of withdrawal of the degree shall be in accordance with the policy of the University in these matters as in force from time to time.