



**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
(A State Government University)  
CET Campus, MBA Block, Thiruvananthapuram – 695 016.

**Applications are invited for PhD research 2017-18 odd semester admission in affiliated colleges to KTU**

**1. Types of Registration**

- a) PhD full time
- b) Ph D part time

**2. Types of online submission of application**

- a) PhD full time with and without fellowship  
(disciplines of Engineering, Technology, Architecture and Management)
- b) Ph D part time for faculty working in affiliated colleges  
(disciplines of Engineering, Technology, Architecture, Basic Sciences & Mathematics and Management)
- c) Ph D part time for external candidates  
(disciplines of Engineering, Technology, Architecture and Management)
- d) PhD full time for QIP and JRF qualified candidates  
(disciplines of Engineering, Technology, Architecture and Management)

**3. Fellowships**

KTU fellowships to full time scholars in discipline Engg, Technology for 3 years– 5 nos  
Higher education scholarships of GoK for full time study in Govt Engg. colleges – 3 nos

**4. Eligibility**

**a) General**

- (i) Master's degree in Engineering/Technology, Architecture or a Master's degree by research in Engineering/Technology with a minimum CGPA of 6.5 are eligible for admission to the Ph.D program with the stipulation that admission to the Masters program should have been based on a valid GATE score.
- (ii) Masters degree in Basic Sciences or Mathematics with a minimum CGPA of 6.5. Such candidates should have qualified through national level examinations such as UGC-CSIR NET to be eligible for admission to Ph.D.



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(iii) For Ph.D in Management, candidates should have a Masters degree or equivalent PG Diploma in Management with a minimum CGPA of 6.0. They should, in addition, have a Bachelors degree with good academic record and should have qualified in national level examinations such as CAT/JMET/XAT/MAT/ATMA/GATE/UGC.

**b) Exemption in the eligibility condition of SC/ST and differently abled**

SC/ST candidates and differently abled persons are eligible for admission with a minimum CGPA of 5.5 at Master's level in all the cases (i) to (iii) above. Other conditions remain same as those for the general category candidates.

**c) Exemptions from requirement of GATE or UGC-CSIR NET or CAT/JMET/ XAT/ MAT/ATMA/GATE/UGC (i) (ii) and (iii)**

(i) Candidates with Master's degree in Engineering/Technology /Architecture or Masters degree in Basic Sciences/Mathematics or Masters degree/equivalent PG Diploma in Management together with a Bachelors degree and having THREE years of teaching experience in the cadre of Assistant Professor or equivalent and above in AICTE approved colleges or NBA accredited departments.

(ii) Those with educational qualifications as in (i) above and having minimum THREE years' experience in a reputed industry (State/Central Government supported organizations/private limited companies in the capacity of Assistant Engineer or equivalent and above) as assessed by an expert committee constituted by the University

(iii) Candidates who have fellowship/scholarship support from UGC/AICTE.

**5. Application submission mode**

Application must be submitted online as specified in web site [app.ktu.edu.in](http://app.ktu.edu.in)

Last date of submission – 28-6-2017

**6. Application fee**

All applicants except SC/ST – Rs 1000/-

SC/ST applicants Rs 500/-



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### 7. Selection process

Selection is made in two stages, through research aptitude test and interview.

a) Research Aptitude test (60)

Type : Objective type

Duration : 1.5 hrs duration

Part 1 : Research methodology (30 marks)

Part 2 : Basic mathematics (30 marks)

Each correct answer carries 1 mark. Each wrong answer reduces 1/4 mark.

Separate cutoff marks for each part of examination.

b) Interview

Final selection is based on interview to test subject knowledge of candidate after test.

**Sponsored candidates secured AICTE/UGC government fellowship for PhD studies need not attend the aptitude test.** Uploading all related documents is mandatory.

Qualifying aptitude test and interview alone will not ensure PhD registration to KTU. The candidate must identify supervisor and place of research satisfying research regulations of KTU and DC must recommend his/her registration to KTU.

Date of aptitude test will be announced in KTU website.

### 8. Residential requirements of Part time scholars

*For all part time registrations, 6 months residential period is mandatory. **Part time application without NOC** in the prescribed format from the employer will summarily be rejected.*

### 9. Mode of communications

*All communications are by Email and intimations are through KTU web site as announcements.*

### 10. Syllabus of Research aptitude test

Part 1 Research Methodology

Introduction to Research: Definition - types of research - identifying and defining research problem –characteristics of good research. Literature review - theoretical framework – mathematical modelling - formulating research hypothesis - Developing research proposal -



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Experimentation - Basic instrumentation – static and dynamic characteristics of instruments – data acquisition system – data validation – statistical tools – design of experiments - test of hypothesis, correlation & regression analysis – numerical modelling – simulation – optimization – error estimate and analysis - preparation of research report- research support systems – software, journals, mathematical tools, citation and abstract data bases – search engines – research funding agencies – research establishments-ethics.

## Part 2 Basic Mathematics

Calculus (Single and Multi variables); vector calculus; Calculus of functions of complex variables; Ordinary differential equations; Partial Differential Equations; Laplace Transforms; Fourier series; Fourier Transforms; Probability and statistics, Probability distributions;

Matrices (rank, system of linear algebraic equations, Eigen values and Eigen Vectors, diagonalization & quadratic form). Numerical Methods (Solution of equations, Numerical Integration & solution of first order ODE)

### Format of questions

1. A systematic step-by-step procedure followed by logical process of reasoning is called

A. Experiment            B. Observation            C. Deduction            D. Scientific Method

2.  $\nabla \times \nabla \phi$ , where  $\phi$  is a scalar point function is

(A) a non-zero vector    (B)  $\nabla^2 \phi$     (C) 1    (D) 0

### 12. Documents to be uploaded (in pdf form)

a) NOC in the format attached – part time PhD (external & internal)

b) Selection letter - full time PhD (QIP & JRF)

c) Facility certificate / joining report - full time PhD (QIP & JRF)

### Dean (Research)



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**Format of NOC**

Letter head

No :

Date:

**To Whomsoever It May Concern**

This NOC is issued to Mr./Mrs./Miss. (Name and address of employee) working in this institution as (designation) since (Date).

(Name of institution) have no objection in permitting Mr./Mrs./Miss. (Employee's name) to pursue PhD on part time basis with place of research in any college affiliated to APJ Abdul Kalam Technological University.

I understood that, the part time research scholars are required to be residential in the place of research for a minimum period of 6 months in the first year.

This NOC is issued on request of (Employee's name)

Sincerely,

Head of Institution.