



**University of Calcutta**  
**Department of Chemical Technology**  
**Admission to Ph.D. (Tech) Programme (RET 2020) in *Applied Chemistry, Ceramic Engineering, Oil Technology, and Pharmaceutical & Fine Chemical Tech.***

**Download [Application Form](#)**

<b>Total Number of Seats:</b>	Applied Chemistry	– 07
	Ceramic Engineering	– 02
	Oil Technology	– 04
	Pharmaceutical & Fine Chemical Tech.	– 06

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**Reservation in admission shall strictly abide by the West Bengal State Higher Educational Institutions (Reservation in Admission) Rules, 2013.**

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**Eligibility:** The eligibility of the candidate will be as per UGC rules.

- (A) Candidates having degree in Bachelor of Technology or Master of Science (without NET/SET/SLET/GATE) securing 55% marks (selection through Entrance Test & Interview);
- (B) Candidates having degree in Master of Technology or Equivalent or Master of Science (with NET/SET/SLET/GATE) securing 55% marks (**Selection through Interview only**).

**Entrance Test:**

- The Ph.D. Entrance test will be of 50 marks (duration 30 minutes) consisting of both Multiple Choice Questions (MCQ) and short questions.
- The [Syllabus](#) for the Entrance Test and subsequent list of the successful candidates will be available in the Departmental Notice Board (near the room of the HOD, Ground floor, Applied Chemistry Building).
- The successful candidates will have to appear for an interview for final selection.
- Declaration of names of selected candidates to be notified later (Subject to approval by the Honorable Vice Chancellor)

**Important Dates:**

- Last Date for Submission of Application Form: 21<sup>st</sup> September, 2020
- Date of Entrance Test (through online) : 28<sup>th</sup> September, 2020
- Publication of List of successful Candidates : Display in the Notice Board/Website
- Date of Interview (through online) : 6<sup>th</sup> October, 2020

All Candidates are requested to download the Application Form from the University website ([www.caluniv.ac.in](http://www.caluniv.ac.in)) and submit the filled up Application Form, self-attested copy of relevant mark sheets, along with the receipt of deposition of Application Fee of Rs. 100/-, paid through [State Bank Collect](#) within the due date to the Head, Department of Chemical Technology, University of Calcutta through Email ([hdctcu@gmail.com](mailto:hdctcu@gmail.com)).



**University of Calcutta**  
**Department of Chemical Technology**

Application Form for Admission of the Ph.D. (Tech.) Programme 2020 in

Applied Chemistry

Ceramic Engineering

Oil Technology

Pharmaceutical & Fine Chemical Technology

(Marked  $\checkmark$  in any one box)

(Candidate interested to apply in multiple programs has to fill separate form)

Name (in BLOCK LETTERS):

Date of Birth :

Father's Name :

Sex : Male/Female/Third Gender

Marital Status :

Whether SC/ST/OBC-A/B/  
Physically Challenged :

Nationality :

Address for Communication :

Phone No. :

Mob:

E-mail ID:

Academic Qualifications (Bachelor Degree onwards):

Name of the Examination	Year	University	Subjects taken	Div./Class	% of Marks

Whether qualified in NET/GATE/equivalent examination:

Signature of the applicant with date:

Self attested copies of documents are to be attached.

\*Candidates are requested to deposit application fee of Rs.100/- through [State Bank Collect](#).

\*\* Original documents may be asked for as and when required by the appropriate authority.



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## **Syllabi for Entrance Test in Ph.D. (Tech.) Programme in**

### **Applied Chemistry**

- Physics and Chemistry of Clay Minerals
- Introduction to Glass & Vitreous Coatings
- Analysis of important Ceramic Raw Materials and Products
- Chemistry & Technology of Fats & Oils-Sources, Chemistry, Processing, Physical and Chemical Properties
- Nutritional Aspects of Fats & Oils
- Chromatographic Analysis of Fats, Oils and Allied Products
- Basic Operational Principles of UV, IR, GC, HPLC, GC-MS, LC-MS, Short Path Distillation etc
- Principles of Analysis of Drugs & Fine Chemicals in Pharmaceutical & Cosmetic Formulations by Chemical, Physico-Chemical, Biological and Micro-Biological Methods. Biological Standardization
- Toxicity Studies of Drugs. Statistical Methods of Evaluation
- Manufacture of Immunological Products like Bacterial and Viral Vaccines, Human
- Crude Oil & Petroleum Product Analysis-Qualitative & Quantitative
- Petrochemical Feedstock: Preparations & Olefins Production
- Common Refinery Operations-Desalting, Distillation, Stripping, Absorption, Solvent Extraction,

### **Ceramic Engineering**

- Physics and Chemistry of Clay Minerals
- Refractories: Definition, Classification, Important Properties & Applications.
- Introduction to Glass & Vitreous Coatings
- Introduction to Hydraulic Binders & Concretes
- Introduction to Fine Ceramics, Electronic Ceramics
- Analysis of important Ceramic Raw Materials and Products
- Physical Testing of Ceramic Raw Materials & Products

### **Oil Technology**

- Chemistry & Technology of Fats & Oils-Sources, Chemistry, Processing, Physical and Chemical Properties
- Nutritional Aspects of Fats & Oils
- Edible and Non-Edible applications of Fats & Oils
- Lipid Derivatives/Fat based Oleochemicals
- Chromatographic Analysis of Fats, Oils and Allied Products
- Basic Operational Principles of UV, IR, GC, HPLC, GC-MS, LC-MS, Short Path Distillation etc

- Lipid Biotechnology
- Fat-based Surfactants
- Basic Chemistry and Technology of Surface Coating
- Perfumery Chemistry

### **Pharmaceutical & Fine Chemical Technology**

- Principles of Analysis of Drugs & Fine Chemicals in Pharmaceutical & Cosmetic Formulations by Chemical, Physico-Chemical, Biological and Micro-Biological Methods. Biological Standardization
- Toxicity Studies of Drugs. Statistical Methods of Evaluation
- Rational Drug Design. Study of Synthetic Drug like Prostaglandins, Steroids and anti-HIV, biologically active Peptides, newer chemotherapeutic agents, chemically targeted drugs etc
- Principles & Engineering, Fermentation of Dextran, Lactic Acid, Antibiotics of importance
- Manufacture of Immunological Products like Bacterial and Viral Vaccines, Human
- Immunoglobulin, Monoclonal Antibodies, Tissue Culture Products and their utilization
- Development of Genetic-Engineering Products. Bioreactors & Biosensors
- Pre-formulation, manufacturing techniques of Novel Drug Delivery Devices. Unit Operations involved in formulations. Stability Studies, Product Development, GMP/GLP. Pharmacokinetics, Pharmacodynamic, Drug interactions
- Optimization of Pharmaceutical and Bioprocesses
- Programming languages-Fortran, C, C++ and Basic

## Procedure of Payment through State Bank Collect

### **MODE OF PAYMENT:**

#### **Application Fee**

Application Fee: **Rs.200/- (for GENERAL and others candidate)** and **Rs.100/- (for SC/ST/PWD candidate)** for each course of application.

Two payment methods are available i.e. online payment through Internet Banking /ATM cum Debit Card/ Credit Card or by cash deposition at any State Bank Branch.

#### **A. Online Payment :**

##### **The instructions for the On-Line Payment of Application Fees**

The Application Fees can be paid through **State Bank Collect** online Banking from anywhere. Facility can be operated by student's parents also through their online banking facility. However, they should enter their-ward's details correctly. The steps stated below shall be strictly followed

This facility is available to students and parents having "SBI internet banking facility or **SBI ATM-cum-Debit Card**". Account Online Transaction facility".

In addition to **this, the students and parents** having "**Other Bank Debit Cards or Credit Cards**" **can also log** on to [www.onlinesbi.com](http://www.onlinesbi.com) and make their Payments of Fees through this portal following the instructions given below. Bank Commission is Rs.10/- to Rs.15/- as applicable extra to be borne by the candidate.

#### **Instructions for Payment of Fees through State Bank Collect from SBI Portal (Steps 1 to 27)**

1. Go to [www.onlinesbi.com](http://www.onlinesbi.com)
2. Select State Bank Collect on Top Horizontal Bar.
3. Read and Tick Mark (✓ check box) on Accept Terms & Conditions.
4. Click on Proceed.
5. Select State: West Bengal (from drop down menu).
6. Select *Type*: Educational Institutions (from drop down menu).
7. Click on GO.
8. Select Educational Institution: Calcutta University PG ONLINE SYSTEM
9. Select (Appropriate Option): M.Tech. Admission
10. Please note that while paying prescribed Application Fees, select University Fees.
11. Select Programme: M. Tech. Admission (from drop down menu).
12. Enter Your (1) Application No. 2) Name 3)Email 4) Mobile 5) Amount.
13. Enter Mobile Number and DOB.
14. Enter Particulars (If you like to add).
15. Enter Fees Amount (as applicable) to be paid as mentioned in Application form after online submission.
16. Enter Remarks (If you like to add for your information).
17. Enter Your Name as entered in University records.
18. Enter Your Date of Birth.
19. Confirm Your Mobile Number (the same as entered in step 13).
20. Enter the Text as shown in the Image appearing on screen
21. Click on Submit.
22. Please verify the entries carefully for its correctness. Once transaction is completed cannot be reverted.
22. Click on Confirm.
23. You will see State Bank *Multiple Options Payment System* (MoPS)
24. You may choose Net Banking (SBI only) or Card payments.
26. In Card Payments, you have three options: 1. SBI ATM-cum-Debit Card, 2. Other Bank Debit Cards and 3. Credit Cards (Check the Bank Charges, appearing against all these options)
27. Note that Bank Charges are minimum for SBI Net Banking and SBI ATM-cum-Debit Card.

## **B. PAYMENT BY CASH :**

If you select payment mode in Cash, you will get option for bank as SBI. Bank Commission is extra to be borne by the candidate.

### **Instructions for Payment of Fess by Cash through “State Bank Collect” from SBI Portal** **[www.onlinesbi.com](http://www.onlinesbi.com) (follow Steps 1 to 24 as mentioned above then)**

25. Click on the other payment mode option as SBI Branch.
26. Follow the further process as per the instructions appearing on screen.
27. Print Pre acknowledgement Payment (PAP) for cash payment through any SBI Branch
28. Go to any SBI Branch and make the payment on production of the PAP.
29. After payment Print e-Receipt from State Bank Collect.
30. Please take Photo Copy of e-Receipt.
31. Attach /Photo copy of e-receipt with Application form for submission at the University Office or by post / Courier on the days specified and displayed on the website.