

PH.D. ADMISSION NOTIFICATION
(FULL-TIME / PART-TIME)
FOR THE SESSION SPRING 2020



BIRLA INSTITUTE OF TECHNOLOGY
(Deemed to be University u/s 3 of UGC Act 1956)
MESRA, RANCHI - 835215 (INDIA)

IMPORTANT DATES

Filling of online form commences from	26 th October 2019
Last date for Applying Online	25 th November 2019
Display of list of eligible candidates to be called of Written Test and Interview	30 th November 2019
DATE OF ENTRANCE TEST	16th December 2019
Interview of the selected candidates	From 3:00 pm On 16 th December 2019
Declaration of 1 st Provisional Selection List on the Institute website / Notice Boards	By 6:00 pm On 17 th December 2019
Admission from 18 th December 2019	
Classes will commence from 2 nd week of January 2020 [Exact date will be notified at later stage]	

CONTACT DETAILS:

Dean, Admissions & Academic Coordination,
Birla Institute of Technology,
Mesra, Ranchi - 835 215
Phone: PBX: 0651-2275444 / 896,
Extn. 4469, and 0651-2275868 (Direct)

E-mail: admissions@bitmesra.ac.in, dean.aac@bitmesra.ac.in

For any queries, candidates should see Ph.D. Ordinance 2018 available on the Institute website (downloadable as pdf document). For any further queries, candidates may contact the Dean, Academic Programme through e-mail at dean.ap@bitmesra.ac.in.

For any queries about the research areas and syllabi of the Tests, candidates may please contact the concerned Head of the Department by telephone or e-mail. (Please see Directory on the Institute website for contact details).

Candidates must visit our website <http://www.bitmesra.ac.in> regularly for updates and/or for any other matters related to the admission procedures.

HOW TO APPLY:

1. To fill online application form, click on the link **“CLICK HERE TO APPLY ONLINE”** to register for the programme and create password for the application process. Do not share the password with anybody. [Please see instructions for filling online application form.](#)
2. Eligible candidates must complete and submit the application form online only [link available on the Institute website www.bitmesra.ac.in]. Pay application fee of Rs.2,500/- (General / OBC candidates) and Rs.1,500/- (SC/ST candidates) inclusive of GST charges through ICICI payment Gateway (candidates may use net banking / debit card / credit card / UPI of any nationalized bank) till the last date of application process. **Fee once remitted shall not be refunded under any circumstances.**

IMPORTANT INSTRUCTIONS:

- Candidates should proceed to fill the Online Application Form only after they satisfy themselves that they fulfill all the eligibility criteria.
- **Apply for one department only.**
- The Department-wise list of candidates to be called for Written Test will be displayed on the Institute website before 7-10 days of Ph.D. Written Test.
- Candidates must carry application form along with supporting documents in original and one set of photocopies of the same at the time of reporting for written test. [No individual intimation will be sent to candidates.](#)
- **No Admit Card will be issued to candidates.**
- Candidates whose names do not appear in the lists, may contact Admissions Office at Mesra by telephone or email.
- Candidates must carry one of the following valid Photo identifications during reporting for Written Test. (Driving license, Passport, PAN Card, Voter ID, Aadhar Card, Employee Identification Card are acceptable)

MINIMUM ELIGIBILITY CRITERIA:

Candidates with following qualification shall be eligible for admission to the Ph.D. Programme of the Institute:

- Candidates possessing M.Tech./M.E./M.Sc. (Engg.)/M.Arch./M.Pharm./M.Plan./M.Sc./MCA/MBA or equivalent Degree in relevant branch from a recognized University/Institute with minimum 60% marks or 6.0 CGPA on a ten point scale in the qualifying examination are eligible to apply for admission in the relevant departments.
- Candidates possessing B.Tech./B.E/B.Sc.(Engg.)/B.Pharm/B.Arch./B.Plan. or equivalent Degree in relevant branch from a recognized University/Institute with a minimum of 80% marks or 8.0 CGPA on a ten-point scale in the qualifying examination and a valid GATE/GPAT score with a minimum of 80 percentile are eligible to apply for admission in the departments as per their Specialization. (In this case, the candidates need to pass in more numbers of qualifying Pre-PhD papers; the concerned detail is described in Ph.D. Ordinance 2018 -Section 9.1).
- Sponsored candidates must have minimum of two years of professional work experience, besides fulfilling the above criteria. In addition, such candidates should have valid sponsorship at least for three years.

RELAXATION FOR SC/ ST CANDIDATES

Eligibility criteria will be relaxed by 5% marks for SC / ST candidates.

Note:

- NOC from the Institute is mandatory for employees of the Institute which shall be obtained before appearing at the admission test for the Ph.D. programme.
- Employees from other organizations shall produce NOC from his/her respective employers at the time of admission.
- In case of the candidates with other grade point scale, the decision of the equivalence made by the assigned committee of the Institute shall be final.

FELLOWSHIP AVAILABLE:

A limited number of Institute Research Fellowship (IRF) with a fellowship amount of Rs. 25,000/- per month for the first two years and Rs. 28,000/- per month for the next two years is available depending on the performance. The minimum marks required for IRF may vary across the departments and department wise minimum marks shall be decided by an appropriate committee. These IRFs shall be distributed based on the performance in the admission test, academic career and interview. Ph.D. admission test is mandatory for candidate aspiring for the IRF.

DEPARTMENT-WISE & SPECIALIZATION-WISE IRF POSITIONS

Fellowships are available in limited specializations. However, candidate can choose any specialization, if desires to pursue Ph.D. in self-financing mode.

S.No.	Department	Specialization	No. of IRF available
1	Architecture	Urban and Regional Planning, Sustainable Housing Planning, Construction Project Management, Sustainable Architecture	1
2		Urban and Regional Planning, Industrial Development Planning, Sustainable Infrastructure Planning, Building Services, Sustainable and Green Architecture	1
3		Architectural Education, Building Science and Technology, Sustainability and Green Architecture	1
4	Bio Engineering	Biomolecular Engineering	1
5		Animal Cell Culture & OCT	1
6		Plant Biotechnology	1
7		Environmental Biotechnology	1

S.No.	Department	Specialization	No. of IRF available
8	Chemical Engg.	Process modelling and simulation-nonlinear systems, signal processing	1
9		Energy and Fuel, Pulp and Paper	1
10		Heterogeneous Catalysis	1
11		Polymer Blends and Composite, Polymer Processing, Rheology	1
12		Multiphase flow, CFD, ANN, Fluidized bed reactor, bubble column reactor	1
13	Chemistry	Electrochemistry	1
14		Biomaterials	1
15		Graft copolymers for wastewater treatment and destabilization of nanomaterials and nano plastics in aquatic systems	1
16		Organic Chemistry: Antiviral Medicinal Synthetic Chemistry	1
17		Co-ordination chemistry & Biomimetic Catalysis	1
18	Civil & Env. Engg.	Water & waste water, air pollution	1
19		Water & waste water analysis, renewable energy	1
20		Phyto-remediation, geospatial tech., ecosystem management.	1
21		Heavy metal, air, water & soil pollution	1
22		Ground water flow modelling	1
23	CSE	Cloud Computing, IoT, NLP, Big Data, Machine Learning, Soft Computing	1
24		Evolutionary & Swarm Optimization (Ant Colony Optimization), Soft Computing, Parallel & Distributed Computing (Grid Computing)	1
25		Sensor Networks, IoT, Database Management Systems	1
26		Data Mining, Machine Learning, Parallel Computing, Genetic Algorithm, Big Data	1
27	EEE	Power System	1
28		Control System	1
29	ECE	VLSI, Microelectronics, nanoelectronics and spintronics	1
30		VLSI Design, Microelectronics and Embedded System Design, IoT, LNA	1
31		Microelectronics and VLSI Design	1
32		Microwave Antennas, RF MEMS	1
33		Circuits and antennas for wireless communication	1
34	Management	Finance / Entrepreneurship	1
35		Marketing / Pedagogy	1
36		HR/IR/OB	1
37	Mathematics	Operations Research	1
38		Cryptography	1
39		Numerical Analysis	1
40		Ecological & Environmental Systems	1
41		Differential Equations	1
42		Applied Statistics	1
43	Mechanical Engg.	FEA, FSW, Flow analysis	1
44		Tribology, thin Films	1
45		Fluid power and Control, Bond graph System Modelling, Fault Diagnosis	1
46		Two phase flow and Heat Transfer, Nuclear Safety	1
47		Turbulent flows involving high Reynolds number, Computational Fluid Dynamics, Multiphase flows, Optimization Techniques	1

S.No.	Department	Specialization	No. of IRF available
48	Pharmaceutical Sc. & Tech.	Pharmaceutical Analysis and Quality Assurance, Pharmaceutical Analysis, Stability Studies, Impurity profiling of API as ICH	1
49		Pharmaceutics, Tissue engineering copolymerization, Polymeric Tissue Scaffolds Technology, Natural & Bimedical compounds.	1
50		Pharmaceutical Biotechnology, Biotechnology, Molecular Biology, Proteomics	1
51		Pharmaceutical Chemistry & Quality Assurance, Phytochemistry, Analysis & CADD.	1
52		Self-Nanoemulsifying Drug Delivery System, Silk Based Nanoparticles, Lipid Based Nanoparticles, Pharmacokinetics, In Silico Simulations, Drug Delivery Bioavailability Enhancement.	1
53	Physics	Non-equilibrium, Statistical Mechanics	1
54		Thin Film, Materials Science, Thin Film Thermocouples, Transparent Conducting Oxide, Hard Coatings	1
55		Condensed Matter Physics, Materials Science, Thin Film, Solar Cell, Hard Coatings, Graphene	1
56		Electroceramics, Ferroelectrics, Piezoelectrics	1
57		Atmospheric Physics, Chemical Transport Modeling	1
58	Remote Sensing	Environmental Modeling, GIS based Rural Planning, Environmental Modeling, Planetary Remote Sensing	1
59		Earth Resources Technology, Environmental Geosciences, Natural Resources and Environmental Management, Snow/Glacier Studies and Climate Change, Natural Hazards, and Disaster Management	1
60		Remote Sensing, DIP, GIS & Applications in various areas (Climate Change, Snow, Urbanization, Transport Network Analysis, Agriculture, Forestry, Natural Hazards, Drought, Land Degradation, Geology, Water Resources, Ecology and Environment)	1
61	Space Engineering & Rocketry	Rocket Propulsion	1
62		Aerodynamics	2

Candidates willing to pursue Ph.D. in self-financing mode (without IRF) are free to choose Ph.D. area as well as supervisor.

Department-wise possible research area/s and faculty specializations are available in Institute website (www.bitmesra.ac.in) under department profile.

DEPARTMENTS OFFERING PH.D. PROGRAMME:

1. Architecture
2. Bio-Engineering
3. Chemical Engineering
4. Chemistry
5. Civil & Environmental Engineering
6. Computer Science & Engineering
7. Electrical & Electronics Engineering
8. Electronics & Communication Engineering
9. Management
10. Mathematics
11. Mechanical Engineering
12. Pharmaceutical Science & Technology
13. Physics
14. Production Engineering
15. Remote Sensing
16. Space Engineering & Rocketry.

SELECTION PROCEDURES:

Selection in the Ph.D. programme shall be based on the performance in a Written Test, Previous academic record and an Interview. Only such candidates, who obtain the minimum required marks in Aptitude Test, Subject Specific Test and the indicated total percentage of marks, will be considered for final preparation of result as given below:

Category of applicant	Aptitude Test (100)	Subject Test (100)	Academic Record (60)	Interview (40)	Total (300)
General	30%	30%	-	-	50%
SC / ST	25%	25%	-	-	45%

Note: Up to 20% of the selected candidates for admission of the respective Department may be allotted to Part-Time candidates depending upon their position in the merit list.

DATE, TIME & VENUE OF THE ENTRANCE TEST & INTERVIEW:

The Ph.D. Entrance Test shall be conducted on 16th December 2019 from 9:00 am to 1:00 pm at the Institute Main Building in the Institute's Campus at Mesra, Ranchi- 835215.

The Ph.D. Entrance Test will consist of 2 parts

a) General Aptitude Test common to all applicants	From 9:00 am to 10:30 am
b) Subject Specific Tests to examine basic fundamental knowledge in the subject	From 11:00 am to 1:00 pm

The syllabi of the Subject Specific Tests for each Department can also be seen on the Department web pages on the Institute website.

DATE OF INTERVIEWS:

The interview process of the selected candidates will be conducted on 16th December 2019 from 3:00 pm onwards in the concerned Departments.

Provisional selection lists, along with procedures for admissions, will be notified by 6:00 pm on or before 17th December 2019, on the Institute website and Notice Boards of the Institute only. [No separate intimations will be sent to candidates.](#) Provisionally selected candidates will be required to take admission by the date given, failing which vacant seats may be allotted to waitlisted candidates. The list of waitlisted candidates will also be announced on our website and Institute Notice Boards only. [No separate intimations will be sent to candidates.](#)

Candidates provisionally admitted to the Ph.D. programme will be required to fill an “Enrollment Form” with details of their proposed field of research, research topic, and name of their guide, within 7 to 10 days after their admission, and submit the same to the Office of Dean (Academic Programme), through the Head of the concerned Department. [The Enrollment Form will be available on the Institute website and at office of the Dean, Admissions & Academic Coordination].

EXEMPTION FROM THE ENTRANCE TEST:

Those with UGC-CSIR/DBT/BINC/ICMR-JRF /DST INSPIRE and all other similar all India fellowships based on a written test may be exempted from the Entrance Test but will be required to appear in the interview.

Note: Candidates will not be entitled to get any kind of financial assistance from the Institute.

DOCUMENTS REQUIRED TO BE PRODUCED DURING ADMISSION:

Candidates must bring original of the following documents at the time of interview and admission along with one set of photocopies of the same:

1. Pass certificate and Marksheet of Class 10 (bearing date of birth)
 2. Marksheet of Class 12 / Intermediate or equivalent
 3. Certificate and Marksheets of Graduation
 4. Certificate and Marksheets of Post-graduation
 5. College Leaving Certificate
 6. Migration Certificate
 7. Candidates with qualifications acquired through correspondence or distance-learning programmes are eligible only if (a) they acquired such qualifications as working professionals / while in employment, (b) the programmes are recognized by the DEC-UGC-AICTE or MHRD, (c) they have passed the qualifying examination at the time of applying, with minimum requisite marks as given in eligibility criteria. They must enclose photocopies of (i) work experience certificate (ii) pass certificate and marksheets of qualifying examination (iii) proof of the programme recognized by the DEC-UGC-AICTE or MHRD in letter head of the Institute/College /University, with their application.
 8. UGC-CSIR/DBT/BINC/ICMR-JRF / DST INSPIRE and all other similar all India fellowships based on a written test for pursuing Ph.D. Admit card and Score card (if applicable)
 9. **Caste certificate / special category certificate (if applicable) in proper format, signed by appropriate authority.**
 10. Sponsorship letter, NOC, Experience Certificate and Facilities available to carry out the research work at their place of working (if applicable) for Sponsored / Part-Time candidates.
- **All candidates belonging to the SC and ST categories must note and obtain caste certificates which should be in proper format and should be signed by appropriate authority of rank not less than SDO. (Note: Final reservation proportion will depend on notification, if any, issued by competent authority and as accepted by the Institute).**
 - Candidates belonging to Persons with Disability [PwD] category must send photocopy of relevant certificate(s) in proper format **signed by appropriate authority.**
 - **The Admissions Office / concerned Departments may not undertake detailed scrutiny of applications before Written Test / Interviews, and all shortlisted applicants called for Test / Interviews are allowed to appear in the Test / Interviews on purely provisional basis, subject to their eligibility being verified at the time of interviews. Merely being allowed to appear in the Test / Interviews will not be considered as a ground for being eligible for admission to the Ph.D. programme. Further, mere submission of application form does not entitle a candidate to appear for the Test / Interviews.**

RESIDENTIAL REQUIREMENTS:

The residential requirement is essential to build the research atmosphere in the Institute. The residential requirement for part time Ph.D. candidates shall be a minimum period of one semester at the Institute for the candidates having PG degree and two continuous semesters at the Institute for the candidates having B.Tech./B.E./B.Sc.(Engg.)/B.Pharm/B.Arch./B.Plan. or equivalent Degree. However, for full time scholars, the minimum residential requirement is of six semesters.

FEE STRUCTURE:

S.No.	Description	Fee (INR) Main Campus / Off Campuses	Fee (USD) Offshore Campuses	Remarks
1.	Admission Fee	5000.00	500.00	Payable at the time of admission
2.	Infrastructure Fee (One time non-refundable)	20000.00	2000.00	Payable at the time of admission
3.	Caution Money (Refundable)	10000.00	1000.00	Payable at the time of admission
4.	Registration Fee for Pre-Ph.D. Qualifying Examinations	2000.00 (per course)	200.00 (per course)	Payable at the time of registration for the Pre-Ph.D. Qualifying Examination
5.	Semester Fee: Full-time Research Scholar	20000.00	3000.00	Payable in each semester at the time of admission and registration
	Part-time Research Scholar (Employees of BIT)	20000.00		
	Sponsored / Part-time Research Scholar (External)	40000.00		
6.	Thesis Submission Fee	20000.00	2000.00	Payable at the time of submission of thesis

Refund rules for the Ph.D. programme

- If a student withdraws / leaves the Institute for any reason in the mid-session without completing the entire programme, all fees paid including the caution money will be forfeited by the Institute.
- If a student with fellowship (Institute / QIP / Project / External) withdraws / leaves the Institute in the mid-session without completing the programme, the entire amount paid to him / her towards fellowship need to be returned by the student before leaving the Institute.

NUMBER OF SEATS AVAILABLE

BIT Mesra (Main Campus)

Sl No.	Department	No. of vacancies
1.	Architecture	4
2.	Bio-Engineering	21
3.	Chemical Engineering	24
4.	Chemistry	29
5.	Civil & Environmental Engineering	20
6.	Computer Science & Engineering	17
7.	Electrical & Electronics Engineering	11
8.	Electronics & Communication Engineering	32
9.	Management	4
10.	Mathematics	8
11.	Mechanical Engineering	21
12.	Pharmaceutical Science & Technology	21
13.	Physics	16
14.	Production Engineering	6
15.	Remote Sensing	7
16.	Space Engineering & Rocketry	9

BIT Off Campuses

Sl No.	Campus	Department	No. of vacancies	Broad area of research available in the Dept of Management at Off Campus
1	BIT Deoghar Campus	ECE	3	-
		Mechanical Engineering	1	-
		Production Engineering	1	-
2	BIT Noida Campus	Computer Science & Engg.	9	-
		Management	12	HRM, OB, IR, Marketing, CSR and Finance
		Mathematics	4	
3	BIT Patna Campus	Civil Engineering	2	
		Computer Science & Engg.	4	
		ECE	4	
		Management	1	HR & Marketing
		Mechanical Engineering	1	
		Physics	3	

Note: Up to 20% of the selected candidates for admission of the respective Department may be allotted to Part-Time candidates depending upon their position in the merit list.

SYLLABUS FOR APTITUDE TEST

The General Aptitude Test for admission to the Ph.D. programme (Session Spring 2020) shall comprise of 50 questions to be answered in 90 minutes. The test will be conducted at Mesra (Main Campus) only, as per date and timings mentioned under important dates.

Questions will be of subjective and objective type. **There will be no negative marking.** For each correct answer a candidate will earn 2 marks. If a question has not been attempted no credit will be given. The questions will be distributed into various areas as follows and the detailed syllabus is given below:

Section	Subject	No. of Questions
A	Analytical Ability and Logical Reasoning	25
B	Test of English Language	25
Total		50

Section A: Analytical Ability and Logical Reasoning: (25 questions - objective type)

This section will test the logical reasoning and visio-spatial reasoning abilities of the candidate.

Section B: Test of English Language: (25 questions - Subjective and objective type)

This section will test the competence of the English language.

Syllabus for subject specific test: [Please see separate link.](#)

Enrollment Form for Ph.D. Programme

Date: _____

To
The Vice Chancellor
Birla Institute of Technology
Mesra, Ranchi – 835215
Through: The Dean (Academic Programme)

Dear Sir/Madam,

1. I have been admitted to the Ph.D. Programme of the Institute in Department of I am enclosing herewith my bio-data for your kind perusal and needful.

2. My proposed field of research will be

(a) Discipline: _____

(b) Field of Research work: _____

(c) Name of the Guide: _____

(d) Proposed Course work:

Theory		Term Paper	
Code	Subject	Code	Subject

3. The No Objection Certificate from my organization (for part - time research scholar only) is attached herewith. The certificate for providing the required research facilities by my organization/institution is also attached herewith.

4. I certify that the particulars given above are correct and I undertake to

(a) Abide by the Rules of the Institute during the Ph.D. Programme.

(b) Appear before the relevant Admission Committee whenever directed to do so. (c) Take any test or qualifying examinations as specified for the Ph.D. programme.

5. The proof of my date of birth, caste (General/OBC/BC/SC/ST) and qualifications are attached.

6. I shall also comply with residential requirement specified for the Ph.D. programme.

Thanking you
Yours faithfully,

Signature: _____

Name: _____ Roll No. _____

Approved / Recommended / Comments _____

Chairperson (DAC/OAC) _____