

PROSPECTUS 2009



TEZPUR UNIVERSITY

(A Central University)

www.tezu.ernet.in

Napaam, Tezpur, Assam 784 028

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IMPORTANT POINTS

This prospectus contains common application form for applying to any of the academic programmes mentioned below:

○ **B. Tech. Programme**

The University offers B. Tech. Programme in (i) Mechanical Engineering, (ii) Computer Science & Engineering (iii) Electronics & Communication Engineering and (iv) Civil Engineering. A single application will address all the four disciplines. As selection will be based on AIEEE score, candidates appearing in **AIEEE 2009** are only eligible for the B. Tech. Programmes at Tezpur University. 50% of the seats in the B. Tech programme are reserved for candidates from the North-eastern region of the country.

○ **Integrated M. Sc. Programmes**

The University offers four Integrated M. Sc. programs in four different departments. Separate examinations of one hour duration will be held for these programmes on 29th May 2009. A candidate is eligible to take examination for all the four programmes in a single application form by giving the options for the programmes according to his/her priority in the application. The application should be sent to the Controller of Examination, Tezpur University.

○ **M. Tech. / MCA/M. Sc./ M.A./ PGDTM/Certificate course**

Duly filled-in application form is to be sent to the respective Head of the Department. Candidates may apply for more than one programme. Each programme needs separate application form. Selection for admission to these programmes will be based on the performance in TUEE 2009. For some programmes (Molecular biology and biotechnology; Computational seismology; Mass com & journalism and PGDTM) personal interview/GD are also conducted. Mathematics at 10 + 2 level is compulsory for candidate applying for M. Tech. in Food Processing Technology and MCA programmes.

○ **Ph. D. Programmes**

Duly filled-in application form is to be sent to the respective Head of the Department. Selection to the PhD programmes is based on personnel interview only. Each Ph. D. programme needs separate application form.

North Eastern domicile {Permanent Residency Certificate (PRC)} requirements

Candidates applying for North Eastern quota in (i) M. Sc. in Molecular Biology and Biotechnology (MBBT) and (ii) B. Tech. must send attested copy of PRC along with application form.

Degree Year for MCA

Qualifying degree should not be obtained prior to 1st January 2008 for MCA programme.

GATE for M. Tech.

GATE qualifying applicants will be given preference for M. Tech. admission. Applicants with high GATE score might take admission directly without writing the TUEE entrance. If number of high GATE scorers (already defined inside the prospectus) applying for the programme is more than the number of seats available in that programme, then the entrance examination will not be conducted for that particular programme.

Eligibility

It is the responsibility of the candidate to ascertain the fulfillment of the Tezpur University admission eligibility requirements. Academic testimonials will be verified at the time of admission. All eligible candidates applying for one or more programmes of (i) M. Tech. (ii) M. Sc. (iii) Integrated M. Sc. (iv) M. A. (v) MCA (vi) PGDTM and (vii) Certificate course will be permitted to appear in TUEE 2009.

Minimum number of candidates per centre

Minimum number of applicants required for a centre is fifteen to conduct TUEE 2009. If sufficient number of applicants are not available for the centre, applicants will be given the centre of subsequent choice.

Certificate (s) / document (s) sent separately will not be entertained.

Certificates for sponsorship / Caste / PWD / PRC etc. are to be attached along with the application form for consideration under the respective categories.

Original certificate to be produced at the time of counseling / admission for verification

SECTION ONE

TEZPUR UNIVERSITY

ABOUT THE UNIVERSITY

Tezpur University was established on 15th January, 1994 by an Act of the Parliament as a teaching and residential University. Over a span of 15 years, the University has played a leading role in transforming the scenario of higher education in the entire North-Eastern region through innovative, employment driven and inter-disciplinary academic programme with transparent and scientific evaluation system and strong work ethics.

The University campus at Napaam, about 15 kilometers east of Tezpur, offers various undergraduate, postgraduate and Ph.D. programmes under five schools such as **Management Sciences; Science & Technology; Energy, Environment & Natural Resources; Humanities & Social Sciences and School of Engineering**. Faculty, research scholars and students are attracted from premier institutes across the country to fulfill its national character by providing modern academic environment for achieving excellence.

Apart from fulfilling the traditional role of the University, that is, to create and disseminate new knowledge in diverse fields, it has been striving to keep pace with the developments that are taking place in a rapidly changing world. Accordingly its systems are modernized as per contemporary requirements through relative grading with transparent and scientific evaluation system and curriculum modernization by 'Cafeteria' approach.

Since its inception the University has been trying to provide its facilities for carrying out meaningful and socially relevant research. All the Departments and various faculty members are thus awarded prestigious research projects from funding agencies like ONGC, UGC, DST, DBT, DAE, AICTE, MS & PI, ICSSR, DRDO, CSIR, ISRO, NSC, MNCE, World Bank etc. and prestigious National and International Fellowships.

FACILITIES AND SERVICES

The University has the following facilities and services for the students and research scholars.

University Library

The University has a Central Library with a rapidly increasing collection of books, periodicals and journals. The library has the INFLIBNET connectivity to facilitate access to other libraries. Most of the necessary books are available. Besides the Central Library, the Departments also have their Departmental Libraries. The catalogue of books and journals is available for users for online access on the campus network.

Computing Facilities

The University has elaborate computing facilities accessible to the students. There is a modern state-of-the-art Central Computer Centre for use by the students and research scholars of Tezpur University in addition to the Departmental computer laboratories. Apart from a large number of PCs and several servers, all connected to the campus LAN, the Centre also has a 4-processor SGI ALTIX-350 server. There are also high quality laser printers, scanners, multimedia accessories, etc. Various software systems are available that run in environments such as UNIX/LINUX, MS-Windows-2000/NT/XP, and Novell Intra Netware. The campus LAN is connected to the Internet through its 512 kbps SCPC VSAT station of the ERNET.

Central Sophisticated Instrumentation Facilities

To provide the state of art facility of analytical instrumentation for imparting practical training and research in all areas of sciences, University has established a Central instrumentation facility (CIF). The facilities of this centre go a long a way in improving the quality of research being carried out in the University. The CIF houses the following sophisticated analytical instruments: 400 MHz NMR, SEM with EDS facilities, GC-MS and ICP-AES. Some more new instruments are going to be added in the centre in immediate future.

Hostel Accommodation

The University has separate hostels for boys and girls adequate to accommodate all students and research scholars. SC/ST students are exempted from paying the hostel seat rent.

Scholarships

A limited number of scholarships are offered to Tezpur University students by various Government/semi-Government organizations such as NEC, DBT, ITDP, MNES, DTE, AICTE, other State Governments, etc. Free studentships are also provided to a limited number of meritorious students belonging to economically weak families. There is provision of UGC for single girl child of the family pursuing non professional PG courses for granting scholarship under "Indira Gandhi Post Graduate Scholarship for single girl child scheme". University provides institutional fellowship to the eligible PhD full time students to carry out the research work.

Health Services

The University has a Health Centre to provide basic medical services with its own medical and paramedical staff. The University has a tie up with an insurance company for coverage of medical hospitalisation expenses. Students will be required to pay a nominal amount of premium at the time of admission.

Games and Sports

The University provides opportunities for students to excel in various departments of sports. The University has basketball, volley ball and tennis courts, cricket and football grounds with playing facilities under flood light and a well equipped multi gymnasium.

Tezpur University Alumni Association (TUAA)

TUAA was formed in 2000 to create a network of the alumni of the University. The web-site of the association provides full listing of events, news and other relevant information.

Instruction Methodology

The medium of instruction / examination in the University at all levels is English.

In framing the courses, care has been taken to see that they are NOT burdened with formal lectures only. There is adequate provision for seminars, tutorials, case studies, guided field work, etc., whatever necessary, to promote the habit of independent thinking.

To relate theoretical knowledge to the practical field, proper measures are taken to conduct case studies and guided field works. Group Discussion is an integral part of teaching pedagogy to help the students in increasing their analytical capability and creativity.

Academic Calendar

The university strictly adheres to a well planned academic calendar specifying the schedule of academic activities. Detailed academic calendar is made available in the University Website as well as in the departments in due time.

CURRICULUM

The medium of instruction / examination in the University at all level is English.

Each academic programme is designed to provide enough flexibility in the choice of courses for the students. Besides the compulsory (core) courses for each of the programmes, the students also have the option to choose courses of their own interest from the elective /optional courses.

In framing the courses, care has been taken to avoid over emphasis on formal lectures alone. There is adequate provision for laboratory works, seminars, tutorials, case studies, guided field work, etc., wherever appropriate, to inculcate the spirit of independent thinking and enrich hands-on experience. Group discussion is an integral part of the curriculum in some programme.

Evaluation System

Continuous and internal, relative grading is followed.

Relative grading is awarded on the basis of continuous internal assessment through class tests, assignments, seminars and term tests.

A Letter Grade signifies the level of standard of qualitative/quantitative academic achievement, which a student attains in a particular course/ research work. Each of the letter grades represent a Grade Point as tabulated below. The letter grades A+ to D are considered as *Pass grades* and F is considered as *Fail grade*.

Letter Grade	Grade Point	Description
A+	10	Outstanding
A	9	Excellent
B+	8	Very good
B	7	Good
C+	6	Average
C	5	Below Average
D	4	Marginal
F	0	Poor

In addition there are other grades as stated below:

Letter Grade	Status	Remarks/Context
I	Incomplete	Letter grade assigned in case any evaluation component remains to be completed due to an extraordinary situation faced by the student. This grade must be converted to any of the regular grades above within the first month of beginning of the following semester by completing the remaining evaluation component(s).
X	Extended Project	Letter grade assigned in case a project work remains incomplete and the work is extended to the following semester.
S	Satisfactory	Letter grade assigned for successful completion of a Foundation/Audit Course.
U	Unsatisfactory	Letter grade assigned for being unsuccessful in a Foundation/Audit Course.
W	Withdraw	Letter grade assigned if a student withdraws from a course after the last date for withdrawal of course.

Academic Probation

A student is placed on Academic Probation under the following situations:

- The CGPA of the student fails below the critical limit of 4.5
- The student secures an *F* grade in any of the **Core Courses**.

A student on Academic Probation is not allowed to register for more than 3 (three) courses during the following semester.

A student on Academic Probation is allowed to improve his/her CGPA by appearing in one repeat examination in the course(s) where he/she secured *D* grade or below within the first month of the following semester. Based on this if he/she is able to raise the CGPA to the critical limit or above and secure pass grade in the Core Course(s) in which he/she secured *F* grade earlier, he/she will cease to be on Academic Probation.

Forced Exit from an Academic Programme:

A student is asked to leave the programme under the following situations:

- The student secures *F* grade in 3 or more courses in a semester.
- The student continues to be on Academic Probation for 2 consecutive semesters.
- The student is not able to complete the requirements of the programme within the specified duration for the programme.

Abridged Academic Calendar 2009

JANUARY 19	Commencement of classes for spring semester
MARCH 19-27	Mid term tests
MAY 16-30	Spring semester end term examinations
JULY 31	Counselling and course registration for new entrants
AUGUST 03	Commencement of classes for autumn semester
OCTOBER 1-10	Mid term tests
DECEMBER 1-12	Autumn semester end term examinations

NOTE: Detailed academic calendar is made available in the University website as well as in the departments

PLACEMENT

The Training and Placement cell of the University is the nodal agency in arranging summer and final placement of the students of the University. Many reputed organizations are taking active interest in the students of the University in offering placements.

The professional and intellectual excellence of the students has succeeded in creating an impact in the corporate, government and other employment sectors within and outside the country. Our *alumni* are the brand ambassadors of the University's programme in teaching & research.

Partial List of Recruiters of Tezpur University Students

Avon International	Girijananda C. Engg. Colege	NIIT, Warangal
DRDO	GNRC	Oil India Limited
Apex Technologies Pv1. Ltd.	Godrej & Boyce Manufac. Co Ltd	ONGC
B & A Limited	Godrej Pacific Ltd.	ORACLE
Canara Bank	Guwahati Refinery	Pradan
Down Town Hospital Ltd.	HCL	PTI
IOC Ltd.	HDFC Bank	Rajiv Gandhi University .
Jubilant Organosys	Hyundai	RIMS, Dibrugarh
NEDFi	IBM	St. Anthony's College
Aircell	ICAR	SaS'ken
Airtel	ICICI Bank	Satyam Computers
Amar Asom	IDBI Bank	SEITCO Ltd.
American Express	IFB	SIEMEN'S Technology
Arunachal University	IIT, Guwahati	SMIT
Asian Paints	i-Process Services(I) Pvt. Ltd.	SMIT, Sikkim
Assam Engineering College	ISRO	Smith Kline Beecham (Horlicks)
Balsara Hygiene Ltd.	ITC Limited	Spice Jet
Bardhaman Knitting	Ivista Solutions Ltd.	SRD Nutrients
BEL	Jamia Millia Islamia	SUZLON, Pune
Bell Ceramics.	Johnson & Nicholson	T&I Limited
Berger Paints	LGElectronics Ltd.	TATA AIG
Business Standard	Look East Channel, Guwahati	TATA Infotech
Cabsford, Guwahati	Lucent Technology	Tata Tea Ltd.
Ceistream Technologies	Mac Lubricants	Techpacindia Ltd.
CII, Chandigarh	Mahindra & Mahindra	TERI, New Delhi
Coca-Cola	Milk Marketing Federation Ltd.	Tezpur University
Colgate-palmolive	MOL India Ltd.	The Gujarat Co-operative
Creative Crest	Monsanto	Toyota
Deskal	NDTV, New Delhi	Vaisnavi Communication .
Disha, New Delhi	NE TV	Vethelpline India. Com
Dr. Reddy's Laboratories	NEEPCO.	Vinay Cements
Dymanics Orbit, Gurgaon	Nestle	Wipro
Dyna Roof	Net Decisions	Wipro GE
E-TV,Hyderabad	NewsLive, Guwahati	Wipro Infotech
Force Computers	NF Railways	
Gauhati University		
GenPact		

STUDENTS DISCIPLINE

Students must strictly follow the discipline as prescribed in the Regulations on Maintenance of Discipline of the University. Violation of any clause by any student will be subjected to disciplinary action as per the regulations.

Ragging in any form is strictly prohibited inside or outside the University. Students found indulging in ragging will be subjected to punishment as per rule.

SECTION TWO

DEGREE, DIPLOMA AND THE CERTIFICATE PROGRAMME

DEGREE / DIPLOMA / CERTIFICATE PROGRAMME

Departments	Programme	Eligibility	Duration		Intake
			Min	Max	
Chemical Sciences	M .Sc. in Applied Chemistry	B. Sc. with Chemistry as Major/Honours subject with a minimum of 45% marks (Physics and Mathematics as subsidiary subjects). Candidates from universities/institutes which do not offer major/honours must have at least 50% marks in chemistry as well as in aggregate with Physics, Chemistry and Mathematics as subject combination.	4 sem.	8 sem.	34
	Integrated M. Sc. in Chemistry	Minimum 60% aggregate marks in PCM (Phy, Chem and Math) subjects at 10+2 and pass marks in English.	10 sem	12 sem	10
Molecular Biology and Biotechnology	M.Sc. in Molecular Biology and Biotechnology *** (MBBT)	Bachelor's degree in Physical, Biological, Agricultural, Veterinary, Fishery Sciences, Pharmacy, Engineering/ Technology, four years B. S. programme, MBBS, BDS with a minimum 55% marks in major/honours. Candidates from universities/institutes which do not offer major/honours must have at least 55% marks in aggregate.	4 sem.	8 sem.	30
	Integrated M. Sc. in Bioscience and Bioinformatics	Minimum 60% aggregate marks with Biology, Chemistry, Physics and/or Mathematics subjects at 10+2 and pass mark in English.	10 sem.	12 sem.	10
Mathematical Sciences	M.A. / M.Sc. in Mathematics	B. A./ B. Sc. with 45% marks in major/honours (either Mathematics or Statistics). Candidates with Statistics major/honours must have minimum 50% marks in Mathematics as a subsidiary course. Candidates coming from universities/institutes which do not offer any major/honours must have 50% marks in aggregate and at least 50% mark in Mathematics.	4 sem.	8 sem.	54
	M.Tech. in Computational Seismology	Master's Degree in Mathematics/ Statistics/ Physics/ Computer Science/ Earth Science (Mathematics at degree level) or Bachelor's degree in Engineering (except Chemical/ Metallurgical/ Agricultural/ Bio/ Textile) with at least 50% marks in aggregate.	4 sem.	8 sem.	12
	Integrated M. Sc. in Mathematics	Minimum 60% aggregate marks in Mathematics, Physics, Chemistry/Statistics subjects at 10+2 and pass mark in English.	10 sem.	12 sem.	10
Physics	M.Sc. in Physics	B. Sc. with minimum 45% marks in Physics as major/honours subject and Mathematics as one of the subsidiary subjects. Candidates from universities/institutes which do not offer major/honours must have minimum 50% marks in Physics as well as in aggregate with Mathematics as one of the subjects.	4 sem.	8 sem.	28
	M.Sc. in Nanoscience & Technology	(i) B. Sc. with 45% marks in Physics as major/honours subjects and Chemistry, Biology/Mathematics as allied subjects. Or (ii) with 45% marks in Chemistry as major/honours subject with Physics, Biology/	4 sem.	8 sem.	15

		Mathematics as allied subjects or (iii) with 45% marks in Biology as major/honours subject with Physics, Chemistry/ Mathematics as allied subjects. Candidates from universities/institutes which do not offer major/honours must have minimum 50% marks in aggregate with Physics/ Chemistry/Biology/ Mathematics as one of the subjects.			
	Integrated M. Sc. in Physics	Minimum 60% aggregate marks in PCM (Phy, Chem and Math) subjects at 10+2 and pass mark in English.	10 sem.	12 sem.	10
Civil Engineering	B.Tech in Civil Engineering	Minimum 50% aggregate marks in PCM (Phy, Chem and Math) subjects at 10+2 and pass marks in English.	8 sem.	12 sem.	15
	B. Tech. in Computer Science & Engineering	Minimum 50% aggregate marks in PCM (Phy, Chem and Math) subjects at 10+2 and pass marks in English.	8 sem.	12 sem.	46
Computer Science & Engineering	Master of Computer Application (MCA)	Bachelor's degree in any discipline with at least 50% marks in major/honours subject or in aggregate in case of students not having major. Passed in Mathematics at 10+2 level. The qualifying degree should not be obtained prior to 1. 1. 2008.	6 sem.	10 sem	54
	M. Tech. in Information Technology *	B. E./ B. Tech. degree in any discipline or MCA or M. Sc. in Computer Science/ IT/ Electronics/ Mathematics/ Physics with at least 50% marks in aggregate. GATE qualified candidates will get preference.	4 sem.	8 sem.	28
	B. Tech. in Electronics & Communication Engineering	Minimum 50% aggregate marks in PCM (Phy, Chem and Math) subjects at 10+2 and pass marks in English.	8 sem.	12 sem.	46
Electronics & Communication Engineering	M. Tech. in Electronics Design & Technology *	B.E./ B. Tech./ AMIE or equivalent in Electronics/ Electrical/ Instrumentation Engineering or M. Sc. in Electronics/ Instrumentation/ Physics (Electronics as specialization) / AMIETE with at least 50% marks in aggregate. GATE qualified candidates will get preference.	4 sem.	8 sem.	35
	M. Tech. in Bioelectronics **	B.E./ B.Tech. in Electronics & Communication Engineering/ Instrumentation/ Chemical Engineering/ Computer Science & Engineering/ Electrical Engineering/ Biomedical Engineering/ Bioengineering/ Neuro Engineering/ Genetic Engineering/ Biotechnology/ MBBS or M.Sc. in Biotechnology/ Biochemistry/ Chemistry/ Polymer Science/ Physics/ Electronics/ Nanoscience & Technology/Instrumentation (with mathematics at 10+2 level) with at least 50% marks in aggregate. GATE qualified candidates will get preference.	4 sem.	8 sem.	15
Food Processing Technology	M. Tech. in Food Processing Technology	B. Sc. with Chemistry as one of the subjects/ B. Sc. (Agriculture)/ B. Sc. Home Science with elective in Food and Nutrition/ B. Sc. (Fishery)/	6 sem.	10 sem.	18

		B.V. Sc. with a minimum 50% marks or equivalent grade point average in major/honours subject. Candidates must have passed Mathematics at 10+2 level. Candidates from universities/institutes which do not offer major/honours must have at least 50% marks in aggregate or equivalent grade point.			
Mechanical Engineering	B. Tech. in Mechanical Engineering	Minimum 50% aggregate marks in PCM (Phy, Chem and Math) subjects at 10+2 and pass mark in English.	8 sem.	12 sem.	46
Energy	M.Tech. in Energy Technology*	B.E./ B. Tech./ AMIE or equivalent in Mechanical/ Electrical/ Electronics/ Instrumentation/ Chemical/ Agricultural Engineering/ Energy Engineering or M. Sc. in Physics and Chemistry with a minimum of 50 % marks in aggregate. GATE qualified candidates will get preference.	4 sem.	8 sem.	28
Environmental Science	M. Sc. in Environmental Science	B. Sc. (Agri.) with 5.0 cgpa in 10 point scale / B. Sc. with minimum 50% marks in Chemistry/Zoology/Botany/Physics/ Environmental Science as major/honours. Candidates from universities/institutes which do not offer major/honours must have at least 50% marks in aggregate.	4 sem.	8 sem.	23
Cultural Studies	M.A in Cultural Studies (Modular)	Bachelor's degree in any discipline with at least 45% marks in the major/honours subject. Candidates coming from universities/institutes which do not offer any major/honours must have at least 50% marks in aggregate.	4 sem.	8 sem.	46
English and Foreign Languages	M.A. in English	Bachelor's degree with at least 45% marks in English as major/honours subject. Candidates coming from universities/institutes which do not offer any major/honours must have at least 50% marks in aggregate with 50% mark in English.	4 sem.	8 sem.	46
	One year Certificate in Chinese (Full time)	10+2 with 45% of marks in aggregate.	2 sem.	3 sem.	39
Mass Communication and Journalism	M.A in Mass Communication and Journalism	Bachelor's degree in any discipline with at least 45% marks in the major/honors subject. Candidates from universities/institutes which do not offer major/honours must have at least 50% marks in aggregate.	4 sem.	8 sem.	31
	P. G. Diploma in Community Communication (part time)	Bachelor's degree in any subject with at least 45% marks in major/honours subject or in aggregate	2 sem	4 sem	15
Sociology	M.A. in Sociology	Bachelor's degree with at least 45% marks in Sociology major/honours or in any subject offered as major/honours. Candidates from universities/institutes which do not offer major/honours must have at least 50% marks in aggregate.	4 sem.	8 sem.	23
Business Administration	Master of Business Administration	Bachelor's degree in any discipline with a minimum of 50% marks in major/honours subject or in aggregate.	4 sem.	8 sem.	46

PG Diploma in Tourism Management (Modular)	Bachelor's degree in any subject with at least 45% marks in major/honours subject or in aggregate.	2 sem.	6 sem.	23
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Relaxation: 5% relaxation in marks for candidates of SC/ST categories.

- * 5 seats are reserved for sponsored candidates (they have to qualify in the Tezpur University Entrance Examination)
- ** 3 seats are reserved for sponsored candidates (they have to qualify in the Tezpur University Entrance Examination)
- *** For M. Sc. in Molecular Biology and Biotechnology, only ten seats will be filled up through Tezpur University Entrance Examination. The **Application Form** attached to this prospectus is only for these ten seats. For rest of the seats, candidates are selected for admission through an "All India Combined Biotechnology Entrance Examination" conducted by the Jawaharlal Nehru University, New Delhi under the sponsorship of the Department of Biotechnology, Govt. of India, New Delhi

IMPORTANT ACADEMIC RULES

Course Registration

The Courses opted by the students in a particular semester are to be registered, which is done in two phases: a) Pre-registration b) Final Registration. Pre-registration of courses is required only for the continuing students, to be taken by the students in a particular semester will be done before the end of the previous semester on a specified date. Final Registration is done after completing the process of addition, deletion and withdrawal of courses as per dates mentioned in the Academic Calendar.

For newly admitted students, registration of courses is done at the time of admission itself:

Attendance Requirement

All students must attend every lecture, tutorial and practical classes, of the course registered by him/her. However, to account for late registration, sickness or such other contingencies, the attendance requirement will be a minimum **75%** of the classes. Students with deficiency in attendance in a course will not be allowed to appear in the end-term examination and will be assigned an **F (fail) Grade** in the course

Renewal of Admission

Every student will renew his/her admission in the successive semesters on or before the notified dates. No student is allowed to get himself/herself admitted after the scheduled date.

Academic Probation

If a student secures one **F(fail) Grade** in any of the core courses in a semester then he/she is put under **Academic Probation**. The student gets a chance to clear Academic Probation at the beginning of the following semester.

Forced Exit

A student is forced to discontinue the programme under the following conditions :

- (i) the student secures F Grade in 3 (three) or more courses in a semester
- (ii) the student continues to be under **Academic Probation** for two consecutive semesters.

ADMISSION PROCEDURE

How to Apply

Eligible candidates seeking admission into different programmes in Tezpur University are required to fill in Tezpur University (TU) Application Form. TU Application Form along with the prospectus can be obtained from (i) branches of AXIS BANK of different towns and cities (enlisted under the TUEE09 examination Centres) by paying Rs.170/- for SC/ST categories and Rs.320/- for the other categories or (ii) in person by paying Rs.150/- for SC/ST categories and Rs. 300/- at the university Controller of Examination office, or (iii) by sending a request to the Controller of Examinations, T.U. with a

Demand Draft of Rs.200/- for SC/ST categories and Rs.350/- for the other categories in favour of The Registrar, Tezpur University, payable at Tezpur, with a self addressed unstamped envelope of 36 x 25 cm., or (iv) downloading the forms from the website (www.tezu.ernet.in). Downloaded Application Form should be accompanied with a draft (in favour of The Registrar, Tezpur University, payable at Tezpur) of Rs. 150/- for SC & ST categories and Rs.300/- for the other categories. **Filled in application (PG/Diploma/Certificate programs) should reach the respective Head of the Departments on or before 30th April, 2009. For B. Tech. and Integrated M.Sc. programmes, the Form filled in all respects should reach the Controller of Examinations, Tezpur University on or before 30th April, 2009.**

Candidates applying for more than one programme must use separate Application Form for each programme. For integrated M.Sc., candidates can apply for all four programmes in single Application Form.

Candidates who have appeared/are appearing in the qualifying examination before August, 2009 may also apply.

It may be noted that Tezpur University is located outside the Tezpur town area; some private courier services may not deliver mails to the University in time. Applications received after the last date will not be considered in any circumstances.

Please fill in the form neatly using CAPITAL LETTERS as far as possible. **Before filling in the columns 1,2,5,8,9,17, 18, 24, 25 and 26 in Form – A, please read the instructions given below.**

Column 1: Programme Applied for : Please write the complete title of the programme along with the Department you are applying for as given in the prospectus. (Example: Programme: M. Tech. in Electronics Design & Technology, Department: Electronics & Communication Engineering).

Column 2: Name in Full: The name should be written in CAPITAL LETTERS in full and should conform to the name as given in the last Board/University examination. **Candidates are to note that the name given in the form will appear in the grade sheets and certificates that will be issued to them by the University.**

Column 5: Candidates are to give their personal telephone numbers and correspondence address. If any candidate has no personal telephone number, the candidate is advised to mention a telephone number at which he/she can be contacted.

Column 8: Enclose a P.R.C. to claim a seat against NE quota (for B. Tech./ MBBT).

Column 9: Candidate must indicate(✓) if he/she belongs to general/ scheduled caste / scheduled tribes /other backward classes /more other backward classes. Also, if the candidate is a person with disability / Kashmiri migrant or belongs to minority communities, this should be indicated accordingly.

Column 14: Write the AIEEE Roll No. along with the year of appearance (enclose a Photocopy of AIEEE admit card).

Column 17: Please indicate clearly whether you have already passed / appeared / are appearing in the qualifying examination to be held before August, 2009.

Column 18 : Give details of educational qualifications as specified in the table.

Column 24: Choice of Entrance Examination Centre (other than for B. Tech.)

Candidates should indicate three centres (in order of preference) for entrance examination out of the list of eighteen centres given below. While every effort will be made to allot the centre of candidate's first choice, the University reserves the right to allot him/her alternative centre of second/third preferences. If any such change arises, the candidate will be informed / notified.

Sl. No	Name of the Centre	Sl. No	Name of the Centre
01	Agartala	10	Jorhat
02	Aizawl	11	Kohima
03	Bhubaneswar	12	Kokrajhar
04	Delhi	13	Kolkata
05	Dibrugarh	14	North Lakhimpur
06	Guwahati	15	Pune
07	Hyderabad	16	Shillong
08	Imphal	17	Silchar
09	Itanagar	18	Tezpur

Column 25 : Choice of Discipline (only for B. Tech.)

Indicate four disciplines in order of your preference from the list below:

CSE	Computer Science & Engineering
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ECE	Electronics & Communication Engineering
ME	Mechanical Engineering
CE	Civil Engineering

Column 26 : Choice of Discipline (only for Integrated M. Sc.)

Indicate four disciplines in order of your preference from the list below:

BIOINFO	Bioscience and Bioinformatics
CHEM	Chemistry
MATH	Mathematics
PHYS	Physics

Admit Cards (For other than B. Tech. Programme):

Please fill in the Admit Card (in duplicate) as well as the Acknowledgement Card attached to this prospectus and send them along with the Application Form.

Enclosures

Photocopies of following documents must be submitted along with the application. Application not accompanied by required documents will be rejected.

Caste Certificate (if applicable). Non-creamy layer certificate in case of OBC is must.

Person with Disability (PWD) Certificate issued by the Competent Authority (if applicable)

Permanent Residential Certificate of North-Eastern States (applicable to candidate applying for admission into B. Tech. and M. Sc. in MBBT under North-East Quota)

No Objection Certificate from the employer for pursuing the course in case of employed / sponsored candidates) in **Form No. IV.**

Sponsorship certificate in case of sponsored candidate in the form of Form-III.

Gap Certificate : In case of a gap of one year or more between the completion of the qualifying examination and the year of admission in the university, the candidate must produce a Gap certificate from the District Police Authorities or an affidavit specifying his/ her occupation during the Gap period.

The selected candidates will have to produce all relevant documents in original at the time of admission. They also have to submit attested copies of all marksheets and certificates at the time of admission.

Selection of eligible candidates

(a) For B. Tech. programmes

- Candidates seeking admission to the B. Tech. programmes are required to appear in the AIEEE-2009 to be conducted by CBSE, New Delhi. All admission except for the top ten rank holders in 10+2 Board / Council Examinations (NE States) shall be based on AIEEE score. Candidates from the NE region securing any of the top ten positions in the 10+2 Board / Council Examinations and with atleast 85% marks are eligible for direct admission to the programme.
- 50% seats are reserved for the NE States. For admission to these seats the candidates are also required to submit application to Tezpur University in the prescribed form provided with this prospectus.
- Admission to the remaining 50% open seats shall be made through the central counseling of AIEEE. The selected candidates will have to fill in the Tezpur University Application Form at the time of admission.

(b) For Integrated M. Sc.

Candidate qualifying the entrance examination conducted by TUEE09 for Integrated M. Sc. programmes will be called for admission according to his/her performance in the examination.

(c) All PG programmes other than MBA

All candidates seeking admission shall have to appear in the Tezpur University Entrance Examinations (TUEE), 2009 as per the schedule given in **Annexure – II** at the centres mentioned earlier. For M.Tech programmes in Information Technology, Electronics Design and Technology and Bioelectronics, however, candidates with valid GATE score of 300 (200 for SC/ST) or above in respective disciplines may seek direct admission. For some programmes candidates selected through TUEE 2009 shall be required to appear for Group Discussion and/or Personal Interview, the dates for which will be intimated in due course. Only eligible candidates will be issued admit cards.

In case of non-receipt of Admit Card, a candidate may contact the Tezpur University Official at the examination centre with proof of submission of Application Form.

The results of entrance examinations are likely to be declared in the **fourth week of June 2009**.

(d) For all programmes

For all programmes candidates shall be selected for admission strictly on merit (based on entrance test and/or interview) basis by a committee constituted for the purpose and the decision of the committee shall be final.

Seats are reserved for SC/ST and Persons with Disabilities (PWD) candidates as per the Central Government Rules. PWD candidates with at least 40% permanent disabilities will only be considered.

The list of selected candidates for admission, including a waiting list, will be notified in the University Notice Board and the selected candidates will also be intimated individually by post. Also the list will be made available on the University Web-site. However, The university will not be responsible for non receipt/ late receipt call letters and no claim will be entertained in any circumstances.

No TA/ DA will be paid to the candidates for appearing in the entrance examination and/or interview.

Admission

The Schedule of Course Registration and Admission is given in **Annexure III**. Selected candidates are to get admitted to the concerned programme by paying all fees as per schedule. The candidate's presence at the time of verification of testimonials etc., course registration and hostel admission is mandatory.

Provisional Admission

Candidates who have appeared/are appearing in the qualifying examination before the date of admission in the year 2009 may be admitted provisionally if otherwise found eligible at the entrance examination and/or interview provided that

1. they have passed all the earlier examinations held for the same degree without any carryover of subject and satisfying the academic minimum eligibility criteria specified for the concerned academic programme;
2. all academic works including theory and practical of qualifying examinations should be completed before the admission.
3. they must produce the evidence of passing the qualifying examination with requisite qualification on or before 31 October, 2009 failing which they will be debarred from appearing the semester end examination.

Application for Hostel Accommodation

Candidates who wish to apply for hostel accommodation will have to indicate in column 13 of the Admission Form-A and to apply in the prescribed form for hostel accommodation to be provided at the time of admission.

Commencement of Classes

Classes for all programmes will commence from 03 August, 2009 as mentioned in Academic Calendar in Section One. A student admitted to any of the programmes shall have to report to the Head of the Department concerned within a week from the date of commencement of classes; otherwise his/her seat will be forfeited and such seat will be filled up from the waitlisted candidate(s).

Refund of Caution Deposit

Refund of caution money shall be made to a student after his/her release from the University. The claim for refund of caution money shall not be entertained beyond a period of one year from the date of release of the student. The caution money shall not be refunded if a student leaves the programme without permission and/or does not join and attend any class after admission. Refund of caution money shall be made against application in prescribed form and production of Release Order.

***CANVASSING IN ANY FORM TO OBTAIN A SEAT WILL LEAD TO
DISQUALIFICATION OF THE CANDIDATE***

COURSE OUTLINES FOR THE ENTRANCE EXAMINATIONS

(I) For B.Tech. programme As per AIEEE (visit: www.aieee.nic.in)

(II) For PG Degree /Integrated M. Sc./ Diploma/ Certificate programmes

Candidates are to sit for Tezpur University Entrance Examinations (TUEE), 2009 to be held during May 29 - 31, 2009. Entrance Examinations for all programmes will be of two hours duration and will carry 100 marks (in case of integrated M. Sc. programmes examination will be of one hour duration for each programme).

M. Sc. in Applied Chemistry : The questions are on the basis of B.Sc. (Chemistry major) syllabus along with 10+2 standard Maths, Physics, Biology and General Aptitude. The test questions will be of objective type as well as descriptive type.

MCA : The written test consists of three parts - (i) Logical Reasoning and Basic Mathematical Ability, (ii) Mathematics (10+2 level) or fundamentals of Computer Science and (iii) English composition.

M. Tech. in Information Technology : The written test will be based on Programming in C, Computer Organization, Data Structures, Operating Systems, System Software, Computer Network, DBMS and Theory of Computation. The candidates may have to face an interview.

M. Tech. in Electronics Design & Technology : B.E. level courses on Electronics, Electrical Engineering, AMIE in Electronics, Electronics Special paper in M. Sc. Physics course.

M. Tech. in Bioelectronics : B. E/ B. Tech. level courses in Electronics Engineering, Electrical Engineering, Instrumentation Engineering, Communication Engineering, Biomedical Engineering, Chemical Engineering, Bioengineering, Computer Science & Engineering, Biotechnology, MBBS level, M.Sc. level courses on Chemistry, Biophysics, Molecular Biology, Cell Biology, Molecular Biology & Biotechnology and Polymer Science, Electronics.

M. Sc. in Molecular Biology and Biotechnology : The entrance examination is held for 10 seats (out of 30 seats) reserved for the domicile of North East India. Questions (objective type & short writing type) on higher secondary level Chemistry, Physics and Mathematics and graduate level Life Science subjects. The written test is followed by personal interview. The final selection is based on the written test and personal interview.

M. A. / M. Sc. in Mathematics : Questions (both objective and descriptive) will be on Graduate level (Pass Course) Mathematics consisting of Algebra, Calculus, Co-ordinate Geometry, Differential Equations, Vectors, Mechanics, Fundamentals of Statistics, etc.

M. Tech. in Computational Seismology : There will be two types of questions. Objective / multiple choice (25 questions covering 50 marks) and Descriptive / long questions (10 questions covering 50 marks) covering topics from Mathematics, Statistics, Physics, Earth Sciences and Engineering. From the descriptive type a total of 10 questions are to be answered out of 25 questions.

M. Sc. in Physics : Up to B. Sc. Physics (Honours) syllabus. There are two papers in the entrance test. The first paper is of objective type and the second paper is of short descriptive type to examine the conceptual clarity of the candidate.

M. Sc. in Nanoscience and Technology : Up to B. Sc. honours in Physics / Chemistry / Biology syllabus. The test will have two parts. Part A consists of 50 objective type questions of one mark each. Part B consists of about 10 short descriptive type questions of 10 marks each of which any five have to be answered.

M. Tech. in Energy Technology : The test paper will include questions on the basic knowledge of Mathematics, Physics and Chemistry (Graduate level courses in Science and Engineering) and knowledge of different forms of energy. The final selection is based on written test and/or personal interview. GATE qualified candidates will get preference.

M. Sc. in Environmental Science : The test paper shall have both objective as well as short descriptive type of questions covering (a) 10+2 level science subjects (Biology, Chemistry and Physics) and (b) Basic concepts of environmental

science, environmental pollution, current environmental issues, agro-ecosystems, Agro-ecology, agriculture including hill agriculture, weather and climate systems.

M. A. in Cultural Studies : The written test includes questions (descriptive as well as objective type) covering (a) General Information on North East India, particularly Assam, (b) Elementary Knowledge about the artistic and cultural heritage of India with particular reference to N.E. India. The candidates may have to face an interview.

M. A. in English : The entrance examination assesses whether the candidate has the level of knowledge and skills expected of a student who has graduated/is going to graduate with Major/ Honours in English.

Certificate in Chinese: The entrance examination will assess the candidate's knowledge of English grammar and usage, ability to write coherent paragraphs in English and general information about China

M. A. in Mass Communication and Journalism : The written test shall comprise of both objective and subjective questions. The objective questions consist of current affairs, general knowledge, English language fluency, a general awareness on Northeast India and the basics of mass media. The subjective section is to test the candidate's writing skills, creative and analytical capabilities.

The final selection will be based on written test, group discussion and personal interview.

Diploma in Tourism Management : The written test of objective type will consist of General Knowledge, Test of Reasoning and Test of English. Short-listed candidates (based on the written test) will have to appear for a personal interview.

P.G Diploma in Community Communication : The written test shall comprise of both objective and subjective questions. The objective questions consist of current affairs and general knowledge on rural development and community affairs in Indian context. The subjective questions are to test the candidate's understanding on rural and community affairs.

M. A. in Sociology : The written test includes questions (objective as well as subjective type) on
(i) General awareness (ii) Understanding of various socio-economic issues.

M. Tech. in Food Processing Technology : The test paper shall have both objective as well as short descriptive type of questions covering (10+2 level) science subjects viz, Mathematics, Chemistry, Physics and Biology, and from 10+2+3 level Basic Food chemistry / Biochemistry / Food & Nutrition, Basic Food Processing (e.g. fruits & vegetables, cereals, legumes, milk, fish, meat and poultry) and Basic Food Microbiology.

(III) Integrated M. Sc. in Bioscience & Bioinformatics / Chemistry / Mathematics / Physics :

Examination will of one hour duration for each programme. Questions will be of 10+2 standard. Question paper for Chemistry/Mathematics/Physics will comparatively have more questions from the respective subject and lesser questions from the other subjects. In case of Bioscience & Bioinformatics, questions will be from life science courses as well as from other subjects like chemistry, physics and mathematics.

SECTION THREE

B. Tech. PROGRAMMES

Curriculum Structure

Time Duration: Minimum : 8 Semesters
Maximum : 12 Semesters

Credit Requirements: Minimum Total : 176
Core Courses : 149
Electives : 27
Humanities : 03
Science : 03
Department : 12
Open : 09

Semester-wise Distribution of Courses for B. Tech. Programme

FIRST YEAR					
Common to all disciplines					
Semester I			Semester II		
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
MS 101	Mathematics I	4	MS 103	Mathematics II	4
PH 101	Physics I	4	PH 102	Physics II	4
CH 101	Chemistry	4	ME 102	Engineering Mechanics	4
EL 101	Basic Electrical Engineering	4	EL 102	Basic Electronics	5
ME 103	Workshop Practice	2	CO 101	Introductory Computing	3
ME 101	Engineering Graphics	3	CO 102	Computing Laboratory	2
Humanities Elective			ES101	Environmental Science	3
EG101/ SO101/ BM 101	Communicative English / Sociology / Elementary Economics.	3			

SECOND TO FOURTH YEAR COMPUTER SCIENCE & ENGINEERING

Semester III			Semester IV		
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
MS 201	Mathematics III	3	CO 205	Formal Language & Automata	3
CO 201	Discrete Structures	4	CO 206	Design and Analysis of Algorithms	4
CO 202	Digital Logic Design	4	CO 207	System Programming	3
CO 203	Data Structures	5	CO 208	Object Oriented Programming	4
CO 209	Computer Architecture and Organization	5	EL 221	Electronic Devices and Circuits	4
EL 204	Signals and Systems	3	EL 206	Principles of Communication	4
Semester V			Semester VI		
CO 301	Operating Systems	4	CO 306	Embedded Systems	4
CO 302	Database Systems	5	CO 307	Software Engineering	4
CO 303	Computer Graphics	4	CO 308	Compiler Design	4
CO 304	Principles of Programming Languages	3	BM 322	Social Responsibility and Professional Ethics in Engineering	3
CO 305	Computer Networks	4		CS Elective I	3
BM 321	Fundamentals of Management	3		Open Elective I	3
Semester VII			Semester VIII		
CO 401	Artificial Intelligence	3	-	CS Elective IV	3
-	CS Elective II	3	-	Open Elective III	3
-	CS Elective III	3	CO 482	Project II	12
-	Open Elective II	3			
CO 471	Industrial Summer Training	2			
CO 481	Project I	6			

Electives					
CO 421	Graph Theory	3	CO 422	Theory of Computation	3
CO 423	Web Technology	5	CO 424	E-Commerce	5
CO 425	VLSI Design	5	CO 426	Advanced Computer Architecture	3
CO 427	Modeling & Simulation	5	CO 428	Computer Peripherals & Interfacing	5
CO 429	Computer Systems Performance Evaluation	3	CO 430	Management Information System	3
CO 431	System Analysis and Design	3	CO 432	Information Theory & Coding	3
CO 433	Digital Signal Processing	3	CO 434	Image Processing	3
CO 435	Mobile Computing	3	CO 436	Wireless Communication	3
CO 501	Network Management and Security	3	CO 502	Data Compression	3
CO 503	Fuzzy Logic and Neural Networks	3	CO 504	Natural Language Processing	3
CO 505	Advanced Database Management System	3	CO 506	Advanced Software Engineering	3
CO 507	Advanced Embedded Systems	3	CO 508	Grid Computing	3
CO 509	Computer Vision	3	CO 510	Robotics	3
CO 511	Ubiquitous and Pervasive Computing	3			

ELECTRONICS AND COMMUNICATION ENGINEERING

Semester III			Semester IV		
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
MS 201	Mathematics III	3	EL 205	Integrated Circuits	4
EL 201	Switching Circuits & Digital Logic	4	EL 206	Principles of Communication	4
EL 202	Electrical Technology	4	EL 207	Instrumentation	4
EL 203	Analog Electronic Devices and Circuits	4	EL 208	Engineering Electromagnetics	3
EL 204	Signals and Systems	3	CO 221	Data Structures and Object Oriented Programming	4
CO 209	Computer Architecture and Organization	5	CO 222	System Software & Operating systems	4
Semester V			Semester VI		
EL 301	Digital Communication	4	EL 306	Communication Networks	4
EL 302	Microprocessors and Interfacing	4	EL 307	Device Modeling & Simulation	4
EL 303	Digital Signal Processing	4	EL 308	VLSI Design	4
EL 304	Control System Engineering	4	BM 302	Social Responsibility and Professional Ethics in Engineering	3
EL 305	Microwave Engineering	4		ECE Elective I	3
BM 301	Fundamentals of Management	3		Open Elective I	3
Semester VII			Semester VIII		
EL 401	Digital Systems Design and VHDL	4	-	ECE Elective IV	3
-	ECE Elective II	3	-	Open Elective III	3
-	ECE Elective III	3	EL 482	Project II	12
-	Open Elective II	3			
EL 471	Industrial Summer Training	2			
EL 481	Project I	6			
Semester VII			Semester VIII		
Electives					
EL 421	Image Processing	3	EL 422	Electronic Design Automation	3
EL 423	Medical Electronics	3	EL 424	Fiber Optic Communication	3
EL 425	Mobile Communication	3	EL 426	Fuzzy Logic and Neural Networks	3
EL 427	Satellite Communication Systems	3	EL 428	Information and Coding Theory	3
EL 429	Graph Theory	3	EL 430	Computer Vision	3
EL 431	MEMS and Microsystems Technology	3	EL 432	Advance Semiconductor Devices	3
EL 433	Biomedical Signal Processing	3	EL 434	Bioneuro Engineering	3

EL 435	Nanoelectronics	3	EL 436	Intelligent Instrumentation	3
EL 437	Wireless Communication	3	EL 438	Digital Signal Processor	3

MECHANICAL ENGINEERING

Semester III			Semester IV		
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
MS 201	Mathematics III	3	MS 202	Mathematics IV	3
ME 201	Solid Mechanics	4	ME 207	Theory of Mechanisms & Machines	4
ME 202	Fluid Mechanics I	3	ME 208	Manufacturing Technology I	3
ME 203	Material Science	3	ME 209	Fluid Mechanics II	3
ME 204	Machine Drawing	2	ME 210	Mechanical Engineering Laboratory II	3
ME 205	Thermodynamics	4	CO 221	Data Structures & Object Oriented Programming	4
ME 206	Mechanical Engineering Laboratory I	3	EL 202	Electrical Technology	4
Semester V			Semester VI		
ME 301	Dynamics & Vibration of Machinery	3	ME 307	Applied Thermodynamics II	3
ME 302	Mechanical Measurements & Instrumentation	3	ME 308	Heat & Mass Transfer	4
ME 303	Manufacturing Technology II	3	ME 309	Systems & Control	3
ME 304	Applied Thermodynamics I	3	ME 310	Mechanical Engineering Laboratory III	3
ME 305	Mechanical Design	4	BM 322	Social Responsibility & Professional Ethics in Engineering	3
ME 306	Advanced Workshop Practice	3		ME Elective I	3
BM 321	Fundamentals of Management	3		Open Elective I	3
Semester VII			Semester VIII		
ME 401	Industrial Systems Engineering	3	-	ME Elective IV	3
-	ME Elective II	3	-	Open Elective III	3
-	ME Elective III	3	ME 482	Project II	12
-	Open Elective II	3			
ME 471	Industrial Summer Training	2			
ME 481	Project I	6			
Electives					
ME 421	Computer Graphics & Solid Modeling	3	ME 422	Optimization Methods in Engineering	3
ME 423	Mechanical Vibration	3	ME 424	Theory of Elasticity	3
ME 425	Machine Tools & Machining	3	ME 426	Reliability Engineering	3
ME 427	Productivity Improvement Techniques	3	ME 428	Finite Element Methods in Engineering	3
ME 429	Gas Turbine & Compressor	3	ME 430	Value Engineering	3
ME 431	Fracture and Fatigue	3	ME 432	Engineering Optimization	3
ME 433	Experimental Stress Analysis	3	ME 434	Composite Materials	3
ME 435	Machine Tool Design	3	ME 436	Combustion Engineering	3
ME 437	Tea Machineries	3	ME 438	Petroleum & Drilling Technology	3
ME 439	Refrigeration and Air Conditioning	3	ME 440	Advanced Solid Mechanics	3
ME 521	Robotics	3	ME 522	Quality Engineering	3
ME 523	Non-Conventional Energy	3	ME 524	Operations Management	3
ME 525	Tribology	3	ME 526	Modern Control System	3
ME 527	Computer Aided Design	3	ME 528	Computer Aided Process Planning	3
ME 529	Artificial Intelligence in Engineering	3	ME 531	Project Management	3
ME 532	Power Plant Engineering	3	ME 533	Energy Management	3
ME 534	Mechatronics	3			

SECTION FOUR

Ph. D. PROGRAMME

CATEGORIES OF CANDIDATES

The University shall admit Ph. D. students under the following categories :

- a) Full Time:** Students under this category shall work full time for the Ph.D. courses/ research. They may apply for fellowship/assistantship available from different funding agencies.
- b) Sponsored:** Candidates may be sponsored by recognised R&D organisations, national institutions, other universities, government organizations or industries. They shall be admitted through the normal process, and they shall not be entitled to any fellowship/assistantship from the University. They shall work full time for the Ph.D. courses/research.
- c) Project Fellows:** Students working on different research projects at Tezpur University may be admitted to the Ph.D. programme provided they satisfy the eligibility criteria, subject to the consent of the Principal Investigator of the project.
- d) Part Time:** Candidates employed in academic institution /University (including Tezpur University)/ R&D organizations may be considered for admission into the Ph.D. programme of Tezpur University, following the normal admission procedure. They shall fulfill the stipulated requirements for Ph.D. admission.

Eligibility for Admission

Master's Degree in Humanities and Social Sciences/ Management Sciences/ Science/ Engineering/ Technology or Master degree in the allied subject with consistently good academic record and minimum of 55% marks or an equivalent CGPA in the Master's Degree/ B.E./ B.Tech. with an aggregate of 80% marks or equivalent CGPA with valid GATE score.

A fellowship in Chartered Accountancy/ Company Secretaryship from a recognized Indian or foreign institution with not less than 60% of marks or equivalent CGPA having a minimum of Bachelor's Degree.

Relaxation in requisite qualifications for SC/ST candidates shall be followed as per Central Govt. rules.

Admission Procedure

1. The Application Form for admission to Ph.D. programme in Form A & B attached to this prospectus duly filled in and completed in all respects must reach the Controller of Examinations on or before the last date specified for the purpose in **Annexure-I**.
2. Applications of the candidates of categories (b), (c) & (d) must be submitted through proper channel.
3. Sponsored candidates should submit the sponsorship certificate from his/her employer in proper format (**Form-III**) attached to this prospectus.
4. Part time candidates shall have to submit a no objection certificate from their employer stating that the candidates shall be allowed to get themselves admitted to the Ph.D. programme at Tezpur University, if selected. Such candidates shall complete their course work by the end of third semester after obtaining necessary leave in the prescribed format (**Form-IV**) attached to this prospectus from their employers.
5. Project fellows shall have to submit their application accompanied by a no objection certificate from the principal investigator in **Form-V** attached to this prospectus.
6. Students selected for admission to Ph.D. programme shall have to get admitted within stipulated date by paying all fees as given in **Annexure-V**.

SELECTION PROCEDURE

Candidates will have to appear before the selection committee constituted by the Heads of the Departments. Candidates will be required to submit documents in support of their candidature before the selection committee.

Academic Session

Academic session of the University shall be from August to July and shall consist of two semester – Autumn (July to December) and Spring (January to June). For details please refer to the Academic Calendar in the website (www.tezu.ernet.in).

Enclosures to be Submitted Alongwith the Application Form

Attested copies of pass certificate and marksheet of board/ council/ university examinations starting from HSLC.

Certificate of age proof.

Caste (SC/ST/OBC) certificate/ Persons With Disability (PWD) certificate from the appropriate authority.

Non Creamy Layer certificate in case of OBC candidate.

No Objection Certificate from employer as per enclosed format (**Form-IV**) in case of in-service candidates.

Sponsorship certificate as per enclosed format (**Form-III**) in case of sponsored candidates.

7. No Objection Certificate from the principal investigator as per enclosed format (**Form-V**) in case of project fellow.

Requisite qualifications for admission into different disciplines of Ph.D. programmes

School	Department	Qualification
Science & Technology	Chemical Sciences	M.Sc. in all branches of Chemical Science/ Physics or M.E./M. Tech. in related subject. NET qualified candidates will be preferred.
	Mathematical Sciences	M.A./M.Sc. degree in Mathematics/ Statistics/ Physics/ Computational Seismology/ Economics with requisite background in Mathematics.
	Physics	M.Sc. in Physics/ Electronics/ Geophysics/ Material Science/ Applied Mathematics/ Nano Science & Technology. M. Phil., M. Tech in Solid State Material Science/ Electronics/ Energy.
	Molecular Biology & Biotechnology	M.Sc. in Biotechnology/ Molecular Biology/ Mol. Biology & Biotechnology/ Biochemistry/ Microbiology/ Genetics/ Plant Breeding/ Agricultural Biotechnology/ Life Sciences/ Botany/ Zoology/ Applied Botany /Biophysics/ Bioinformatics.
Engineering	Electronics & Communication Engineering	M.E./ M.Tech./ M.Sc./ Engg./MS in Electronics/ Communication/ Electronics Design/ Electrical/ Instrumentation / Control/ Microwave /Biomedical/ Bioelectronics/ Bio-Technology/ Computer Science/ Information Technology. M.Sc. in Electronics/ Physics/ Applied Mathematics. MCA with Physics, Chemistry and Mathematics in Bachelor degree, MBBS with MD/ MS degree. BE/ B.Tech. with 80% marks in aggregate or equivalent CGPA with valid GATE score.

	Computer Science & Engineering	M. Tech. in Computer Science/ I.T./ Electronics MCA M. Sc. in Computer Science/ I.T. BE/B.Tech. with 80% marks in aggregate or equivalent CGPA with valid GATE score.
	Food Processing Technology	M.Sc. in Food Technology / Food Science & Technology / Food Processing Technology / Food and Nutrition / Microbiology / Food microbiology / Biochemistry / Chemistry / Biotechnology.
Humanities & Social Science	English & Foreign Language	M.A. in English (specialization may be in Literature, ELT or Linguistics) M.A. in Linguistics
	Cultural Studies	Post graduates of any discipline of Humanities and Social Sciences, having proven interest in Folklore, Cultures, Languages and Literatures, Ethnic Groups and other related topics with special reference to North-East India
	Sociology	M.A. in Sociology / Cultural Studies / Anthropology (with specialization in Social Anthropology) / Economics / History / Political Science / Philosophy / Mass Communication / English / Law / Management.
Energy, Environment & Natural Resources	Energy	M.Sc./ ME/ M. Tech. degree in Energy Technology/ Energy Management/ Energy related Engineering & Technology/ Physics/ Chemistry/Agriculture/ Allied subjects.
	Environmental Science	M.Sc. in Environmental Science/ Botany/ Applied Botany / Chemistry/ Physics/ Zoology/ Earth Sciences/ Agro-forestry/ Life Science. M.Sc.(Agri) in Crop Physiology/ Biochemistry/ Horticulture / Agronomy/ Soil Science/ Meteorology. M.Sc. in Agricultural Science.
Management Sciences	Business Administration	M.B.A./ PGDM M. Com. M.A./ M. Sc. in Economics M.A. in Psychology/ Sociology and Anthropology M.C.A M.T.M./ M.T.A. FCA/ FCS/ FICWA M.E. / M. Tech. in any discipline M.Sc. in Agriculture/ Home Science/ Fishery/ Statistics M.V.Sc. in (Veterinary Science)

Recognised Supervisors of Tezpur University and their area of specialization

Department of Chemical Sciences

Name & Designation	Area of Specialization
Dr. S.K. Dolui, Professor	Fibre reinforced plastic, self reinforced plastic, water based coating and adhesive, diffusion of small molecule through plastic.
Dr. N.S. Islam, Professor	Synthetic Inorganic Chemistry and Biomimetic Chemistry of Transition Metals
Dr. T.K. Maji, Professor	Grafting on fibres, Rubber processing, Reaction engineering, Emulsion Polymer, Textile finishing.
Dr. R.K. Dutta, Reader	Surfactant and Drinking Water.
Dr. N. Karak, Reader	Synthesis of Polymer, Blends and Nanocomposites
Dr. R.C. Deka, Reader	Theoretical Chemistry and Computer Modeling.
Dr. R. Bora, Lecturer (Sr.)	Synthesis of bioactive molecule, Development of green methodologies for organic transformation
Dr. A.J. Thakur, Lecturer	Heterocyclic chemistry, Organic synthesis and Molecular container chemistry
Dr. A.K. Phukan, Lecturer	Theoretical Inorganic and Organometallic chemistry
Dr. P. Pujari, Lecturer	Physical chemistry

Department of Mathematical Sciences

Dr. M. Borah, Professor	Discrete Distribution, Combinational Optimization, Genetic Algorithms, Numerical Analysis.
Dr. N. Deka Baruah, Reader	Number Theory, Ramanujan's Mathematics
Dr. D. Hazarika, Reader	General Topology, Fuzzy Sets and Application
Dr. M. Hazarika, Lecturer (Sr.)	Functional Analysis, Operator Theory
Dr. B. Deka, Lecturer	Finite Element Method

Department of Physics

Dr. A. Choudhury, Professor	Condensed Matter Physics, Laser Physics, Quantum Electronics
Dr. A. Kumar, Reader	Condensed Matter Physics, Solid State Ionics
Dr. J. K. Sarma, Reader	Theoretical High Energy Physics, Particle Physics
Dr. N. S. Bhattacharyya, Reader	Microwaves
Dr. N. Das, Lecturer (Sr.)	Plasma Physics
Dr. G. A. Ahmed, Lecturer (Sr.)	Laser Physics, Optoelectronics
Dr. D. Mohanta, Lecturer (Sr.)	Condensed Matter Physics and Nanoscience
Dr. P. Deb, Lecturer	Nano Science and Nano Technology, Physics of Materials

Department of Molecular Biology & Biotechnology

Dr. B. K. Konwar, Professor	Plant Biotechnology, Microbial Genetics, Petroleum Biotechnology
Dr. A. K. Mukherjee, Reader	Biochemistry, Microbial Biotechnology, Enzyme Technology

Dr. (Mrs) S. Baruah, Reader	Immunology, Immunogenetics
Dr. A. K. Buragohain, Reader	Plant Biotechnology, Microbial Biotechnology, Molecules Biology
Dr. S.K. Ray, Lecturer (Sr.)	Molecular Biology
Dr. A. Ramteke, Lecturer	Radiation Oncology

Dept. of Electronics & Communication Engineering

Dr. M. Bhuyan, Professor	Sensor Design, Image Processing, Machine Vision.
Dr. S. Bhattacharyya, Reader	Microwave Antennas
Dr. J. C. Dutta, Reader	Bio-electronics

Department of Computer Science & Engineering

Dr. M. Dutta, Professor	Optimization, Computational Theory
Dr. D. K. Saikia, Professor	Networks, Mobile Computing
Dr. D. K. Bhattacharyya, Professor	Data Mining, Cryptography
Dr. S. K. Sinha, Professor	Workflow Automation, Web Theory
Dr. S. M. Hazarika, Reader	Spatial Reasoning, Cognitive Vision
Dr. U. Sharma, Reader	Natural Language Processing

Department of English & Foreign Languages

Dr. M. M. Sarma, Professor	Applied Linguistics, Literatures in English
Dr. B. K. Danta, Professor	American Literature, Critical Theory
Dr. P. K. Das, Reader	American Literature, Indian Writing in English
Dr. M. Borbora, Reader	Linguistics (Syntax, Psycholinguistics)

Department of Cultural Studies

Dr. S.K. Dutta, Professor	Folkloristics, Assamese Literature, Language & Culture
Dr. P. M. Sarma, Reader	Cultural Studies, Literary Theories

Department of Sociology

Dr. C. K. Sarma, Reader	Social Development, Culture & Media Studies, Environmental Sociology, Nationalism.
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Department of Energy

Dr. D. Konwer, Professor	Biomass Energy, Fossil Fuels, Energy & Environment, Waste Management.
Dr. S.K. Samdarshi, Professor	Solar Energy, Solar Photocatalysis, Hydrogen Energy, Energy Education.
Dr. D. C. Baruah, Reader	Biomass Energy, Energy Management
Dr. D. Deka, Reader	Biofuels, Biomass Assessment, Bioenergy & Environment
Dr. R. Kataki, Lecturer	Biofuels, Energy & Environment, CDM

Department of Environmental Science

Dr. K. K. Baruah, Professor	Environmental Physiology and Biochemistry
Dr. K. P. Sarma, Reader	Environmental Pollution, Remediation of Toxic Substances
Dr. A. K. Das, Lecturer	Geomorphology, Local and Regional Climate
Dr. R. R. Hoque, Lecturer	Environmental Monitoring and Assessment, Air Pollution
Dr. (Mrs) Kh. A. L. Devi, Lecturer	Forest Ecology (Population Ecology and Regeneration Ecology), Conservation of Biological Diversity conservation and Ethno botany

Department of Business Administration

Dr. S. S. Khanka, Professor (On lien)	Human Resource Management
Dr. (Mrs.) C. Goswami, Reader	Finance & General Management
Dr. M. K. Sarma, Reader	Services Marketing, Tourism
Dr. C. Goswami, Reader	Consumer Behaviour and Promotional Strategies, Tourism
Dr. S. S. Sarkar, Reader	Finance, Accounting, Taxation & Social Development Issues

Dr. (Mrs) P. Baruah, Reader	Human Resource Development
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Department of Food Processing Technology

Dr. (Ms.) C. L. Mahanta, Professor	Rice Science & Technology, Product Development & Food Quality.
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Dr. S. C. Deka, Reader	Food Biochemistry & Food Quality
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SECTION FIVE

DEPARTMENTS

DEPARTMENT OF CHEMICAL SCIENCES

The Department was established in the year 1997 with the objective of providing students with broad based training in various disciplines related to Chemical Sciences. The Department offers M. Sc. programme in Applied Chemistry with specialization in Polymer Science, Medicinal Chemistry and Catalysis. The programme provides students with a wide choice of elective relevant to the frontiers of these branches of Chemical Sciences. The faculty members are involved in advanced research programmes in the areas of synthesis, characterization and processing of polymer, nanocomposite materials, bioinorganic chemistry, surfactant systems, synthetic organic chemistry, theoretical chemistry and environmental chemistry.

Programmes offered

1. Integrated M. Sc. in Chemistry
2. M. Sc. in Applied Chemistry
with specialization in Polymer Science, Medicinal Chemistry and Catalysis.
3. Ph. D. in Chemistry.

Faculty

Professors

Dolui S. K., Ph. D. (IIT, Kharagpur)
Islam N. S., Ph. D. (NEHU, Shillong)
Maji T. K., Ph. D. (Calcutta University, Kolkata)

Readers

Dutta R. K., Ph. D. (NEHU, Shillong), Head of the Department
Karak N., Ph. D. (IIT, Kharagpur)
Deka R. C., Ph. D. (NCL, Pune)

Senior Lecturer

Borah R., Ph. D. (Gauhati University)

Lecturers

Phukan A. K., Ph. D. (Hyderabad University)
Thakur A. J., Ph. D. (RRL, Jorhat)
Puzari P., Ph. D. (IIT, Guwahati)

Courses offered in the M. Sc. in Applied Chemistry programme

Semester I			Semester II		
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
AC 401	Inorganic Chemistry -I	3	AC 407	Inorganic Chemistry – II	3
AC 402	Organic Chemistry - I	3	AC 408	Organic Chemistry – II	3
AC 403	Physical Chemistry - I	3	AC 409	Physical Chemistry – II	3
AC 404	Quantum Chemistry and Chemical Bonding	3	AC 410	Computers In Chemistry	4
AC 405	Physical Chemistry, Laboratory	3	AC 411	Principles and applications of Spectroscopy	3
AC 406	Inorganic Chemistry, Laboratory	3	AC 412	Organic Chemistry Laboratory	4
			AC 413	Seminar	1
Semester III			Semester IV		
AC 501	Chemical Engineering Principles	3		Elective – V	3
	Elective - I	3		Elective – VI	3
	Elective - II	3		Elective – VII	3
	Elective - III	3	AC 529	M. Sc. Project	9
	Elective - IV	3			
	Elective - Laboratory Courses	6			

***Students can opt for elective papers from the following groups**

Elective - I			Elective - Laboratory Course		
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
AC 502	Polymer Analysis, Testing and Characterization		AC 512	Polymer Synthesis and Analysis Laboratory	
AC 503	Medicinal Chemistry - I		AC 513	Advanced Laboratory Course in Organic Chemistry - I	
AC 518	Fundamentals of Catalysis and Surface Science		AC 514	Advanced Laboratory Course in Organic Chemistry-II	
Elective - II			AC 515	Catalysis Laboratory	
AC 505	Fundamentals of Polymers and their Processing		Elective - VI		
AC 506	Environmental and Green Chemistry		AC 519	Polymer Physics and Rheology	
Elective - III			AC 520	Medicinal Chemistry - II	
AC 507	Rubber Science and Technology		AC 521	Bioactive Molecules	
AC 508	Molecular Modeling of Organic and Inorganic Compounds		AC 522	Homogeneous Catalysis	
AC 509	Natural Products		Elective - VII		
Elective - IV			AC 523	Chemistry of Paints and Surface Coatings	
AC 510	Introduction to Polymer Composites		AC 524	Basic Fibre Science	
AC 511	Advanced Analytical Techniques		AC 525	Biodegradable Polymers	
Elective - V			AC 526	Bioinorganic and Biophysical Chemistry	
AC 516	Production of Industrial Polymer		AC 527	Medicinal Chemistry - III	
AC 517	Newer Methods in Organic Synthesis		AC 528	Heterogeneous Catalysis	
AC 504	Solid State Chemistry				

Facilities

The Department is equipped with sophisticated instrumentation facilities, which include FTIR, CHN Analyzer, Thermal Analyzer, UV-Visible Spectrophotometer, Universal Testing Machine (UTM), Atomic Absorption Spectrophotometer, Polarizing Microscope, Computational facilities etc. in addition to laboratories for research and post-graduate level Chemistry, Petro-Chemicals and Polymer Laboratories and a Polymer Processing Workshop. Besides these the university has central instrument facilities of Scanning Electron Microscope and 400MHz Nuclear Magnetic Resonance, GC-MS and ICPAES.

Award

The highest scorer among the students of Applied Chemistry programme is awarded with the Applied Chemistry Education Award.

DEPARTMENT OF MOLECULAR BIOLOGY AND BIOTECHNOLOGY

The Department of Molecular Biology and Biotechnology was established in July 1997 with the objectives to train and create quality human resources, and persuasion of quality research work in the challenging and frontier areas of modern biotechnology. The department has a close linkage with the industry and academic institutes of the country.

The current research activities in the department includes microbial biotechnology, petroleum biotechnology, snake venome biochemistry, enzymology and enzyme technology, plant biotechnology, medicinal plants, immunology and immunogenetics, and evolutionary genomics.

Programmes offered

1. Integrated M. Sc. in Bioscience and Bioinformatics
2. M. Sc. in Molecular Biology and Biotechnology
3. Ph. D.

Faculty

Professor

Konwar B. K., Ph.D. (Imperial college, London), Dean, School of Sc & Tech.

Readers

Mukherjee A. K., Ph.D. (Burdwan University); Head of the Department

Baruah S, Ph.D. (Panjab University, Punjab)

Buragohain A. K., Ph. D. (Imperial collge, London) (On lien, as The Registrar, TU)

Lecturers

Ray S. K., Ph. D. (CCMB, Hyderabad; degree awarded by JNU)

Ramteke A., Ph.D. (Jawaharlal Nehru University)

Mandal M., Ph. D., (IGIB, Delhi; degree awarded by DU)

Medhi T., Ph.D. (IIT, Kharagpur)

Kalita, E., M. Sc. (Tezpur University)

Courses offered in the M. Sc in Molecular Biology and Biotechnology programme

Core Courses					
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
BT 401	Genetics & Cytogenetics	3	BT 402	Cell Biology	3
BT 403	Biochemistry	4	BT 404	Microbiology	4
BT 405	Remedial Mathematics		BT 406	Biophysics	2
BT 407	Techniques and instrumentation	3	BT 408	Enzymes and Enzyme Technology	3
BT 409	Immunology	4	BT 410	Molecular Biology	4
BT 411	Cell and Tissue Culture	4	BT 412	Fermentation and Process Control	4
BT 413	Genetic Engineering I	4	BT 414	Application of Computer in Biotechnology	3
BT 418	Credit Seminar	2	BT 419	Genetic Engineering II	4
BT 421	Project	14	BT 420	Management & Legal Issues in Biotechnology	2
Elective Courses					
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
BT 415	Animal Biotechnology	4	BT 416	Plant Biotechnology	4

BT 417	Food Biotechnology	4			
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Facilities

The Department houses a range of sophisticated equipment such as Gel Documentation System, High Pressure Liquid Chromatography, Protein Purification System, Fraction Collector, Electrophoresis System, Millipore Water Purification System, PCR Machine, Fermentor, CO₂ incubator, Ultra Sonicator, Incubated Shaker, Deep Freeze, Tensiometer, Inverted Microscope, Tissue Culture Facility, Gas Chromatography Mass Spectrometry(GC-MS), UV-VIS Spectrophotometer, Deep Freezer, Cold Room, Pulse Field Gel Electrophoresis Apparatus, 2-D gel Electrophoresis Apparatus, High Speed Centrifuge, ELISA Reader.

Departmental Library

Apart from basic and advanced text books in the Departmental library, additional books, collection of latest references books, number of foreign and national journals as well as Electronic journals in the University library.

Fellowship

The students admitted to the M. Sc. programme are eligible for a DBT sponsored monthly studentship of Rupees one thousand two hundred only.

DEPARTMENT OF MATHEMATICAL SCIENCES

The Department was started in July 1994 with the objective of producing trained manpower for undertaking research and teaching in mathematics and allied branches of basic or applied sciences. The Department carries out research in the areas of discrete probability distribution, genetic algorithms/ combinatorial optimization, pattern recognition, operator theory, fuzzy mathematics, number theory and mathematics influenced by Ramanujan, Finite element method, etc.

Programmes offered

1. Integrated M. Sc. in Mathematics
2. M. A. / M. Sc. in Mathematics
3. M. Tech. in Computational Seismology
4. Ph. D.

Faculty

Professor

Borah M., Ph. D. (Gauhati University),

Readers

Baruah N. D., Ph. D. (Tezpur University), Head of the Department

Hazarika, D., Ph.D. (JMI, Delhi)

Lecturers

Hazarika, M., Ph. D. (Tezpur University)

Sarmah, B. P., M. Sc. (Gauhati University)

Dutta, S., M. Sc. (Delhi University)

Barman, R., M.Sc. (IIT, Delhi)

Sen S., M. Sc. (Gauhati University)

Haloi R., M. Sc. (Gauhati University)

Deka, B. Ph. D. (IIT, Guwahati)

Courses offered in the M.A. / M. Sc in Mathematics programme

Core Courses					
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
MS 401	Abstract Algebra	4	MS 408	Topology	4
MS 403	Linear Algebra	4	MS 410	Functional Analysis	4
MS 405	Real Analysis	4	MS 424	Computer Laboratory II	1
MS 409	Probability & Statistics	4	MS 501	Classical Mechanics	4
MS 411	Computer Programming+	4	MS 507	Partial Differential Equations	4
MS 421	Computer Laboratory I	2	MS 508	Mathematical Methods	4
MS 416	Numerical Analysis+	3	MS 503	Mathematical Programming	4
MS 414	Ordinary Differential Equations	4	MS 513	Project	6
MS 406	Complex Analysis	4			
+ Course for which there is a separate practical unit assigned as Computer Laboratory I/II					
Elective Courses					
MS 541	Fluid Mechanics	4	MS 572	Operations Theory -II	4
MS 542	Electrodynamics	4	MS 573	Number Theory - II	4
MS 543	Relativity	4	MS 574	Advanced Algebra - II	4
MS 544	Operation Research	4	MS 576	Quantum Mechanics -II	4
MS 545	Elliptic Curves	4	MS 576	Mathematical Modelling-I	4
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
MS 546	Algebraic Number Theory	4	MS 578	High Energy Astrophysics	4
MS 547	Numerical Linear Algebra	4	MS 579	Mag. Hydr. & Plasma Physics -II	4
MS 548	Mathematical Logic	4	MS 580	Sampling Techniques -II	4
MS 549	Graph Theory	4	MS 581	Stochastic Processes - II	4
MS 552	Operator Theory - I	4	MS 582	Reliability Theory	4

MS 553	Number Theory I	4	MS 583	Advance Analysis –II	4
MS 554	Advanced Algebra - I	4	MS 584	Multivariate Analysis -I	4
MS 556	Quantum Mechanics -I	4	MS 585	Fuzzy Sets & Applications-II	4
MS 557	Mathematical Modelling-I	4	MS 586	Parallel Numerical Algorithms	4
MS 558	General Theory of Relativity	4	MS 587	Finite Element Method	4
MS 559	Mag. Hydr. & Plasma Physics -I	4	MS 588	Applied Matrix Theory	4
MS 560	Sampling Techniques -I	4	MS 591	Computational Fluid Dynamics	4
MS 561	Stochastic Processes - I	4	MS 591	Computational Fluid Dynamics	4
MS 562	Statistical Quality Control	4	MS 593	Wavelets and Applications	4
MS 563	Advance Analysis –I	4	MS 594	Advanced Topology-I	4
MS 564	Multivariate Analysis -I	4	MS 595	Numerical Solutions of ODE	4
MS 565	Fuzzy Sets & Applications-I	4	MS 596	Advanced Topology-II	4
MS 566	Fourier Analysis	4	MS 597	Numerical Solutions of PDE	4
MS 567	Continuum Mechanics	4	MS 598	Algebraic Geometry	4
MS 568	Theory of Distribution and Sobolev Spaces	4	MS 599	Probability Theory	4

Courses offered in the M. Tech. in Computational Seismology programme

Core Courses					
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
SM 611	Continuum Mechanics	4	SM 623	Computational Seismology	6
SM 612	Stochastic Processes & Time Series Analysis	4	SM 622	Inverse Theory and Statistical Inference	4
SM 613	Physics of the Earth and Geodynamics	4	SM 621	Mathematical Methods in Seismology	4
SM 614	Computational Techniques & Programming	4	SM 615	Finite Element Methods and Optimization Techniques	4
SM 610	Computational Laboratory-I	5	SM 620	Computational Laboratory -II	6
SM 640	M. Tech Dissertation- I	10	SM 650	M. Tech Dissertation- II	14
Elective Courses					
SM 631	Computer Graphics and Visualization	4	SM 637	Structural Dynamics & Earthquake Engineering	4
SM 632	Pattern Recognition in Geo-sciences	4	SM 638	Fuzzy Set Theory & Applications	4
SM 634	Digital Signal Processing	4	SM 639	Geo-informatics & Data Analysis	4
SM 635	Advanced in Seismology	4			

Facilities

The Department has a state of the art computer laboratory established with assistance from the DST. It is equipped with 2 high performance servers, 2 workstations and 35 PCs. The latest scientific and mathematical software packages are available. The laboratory is fully networked and it linked with the central computer center via LAN with access to the INTERNET.

The Departmental Library

The Departmental Library has a collection of books contributed by the National Board of Higher Mathematics (NBHM) and Inter University Centre for Astronomy and Astrophysics (IUCAA) besides other text books.

Scholarship

The selected candidates (12) for the M. Tech. in Computational Seismology programme will be eligible for a consolidated assistantship of Rs. 5000/- per month.

DEPARTMENT OF PHYSICS

The Department was started in 1998 and aims to produce trained manpower for teaching and undertaking theoretical as well as experimental research in different branches of Physics. Since its inception the Department has sought to create a quality environment in physics teaching and research. Research activities are being carried out in the areas of condensed matter physics, photonics, high energy physics, microwaves, plasma physics and nanoscience and technology.

Programmes offered

1. Integrated M. Sc. in Physics
2. M. Sc. in Physics
3. M. Sc. in Nanoscience and Technology
4. Ph. D.

Faculty

Professor

Choudhury A. J., Ph. D. (Oxford University)

Readers

Kumar A., Ph. D. (IIT, Kanpur)

Sarma J. K., Ph. D. (Gauhati University), Head of the Department

Bhattacharyya N. S., Ph. D. (Delhi University)

Lecturers

Ahmed G. A., Ph. D. (Gauhati University)

Das N., Ph. D. (Gauhati University)

Mohanta D., Ph. D. (Tezpur University)

Francis Ng. K., M. Sc. (Delhi University)

Deb P., Ph. D. (Jadavpur University)

Karmakar P. K., M. Sc. (Gauhati University)

Courses offered in the M. Sc. in Physics programme

Core Courses					
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
PH 400	Physics Lab - I	5	PH 411	Statistical Physics	3
PH 402	Quantum Mechanics - I	3	PH413	Computational Techniques	3
PH 403	Mathematical Methods of Physics - I	3	PH 415	Nuclear Theory & Particle Physics	3
PH 404	Electromagnetic Theory - I	3	PH499	Physics Lab - II	5
PH 405	Semiconductor Devices	3	PH500	Project Work - I	5
PH 407	Quantum Mechanics - II	3	PH501	Condensed Matter Physics & Material Science - I	3
PH 409	Mathematical Methods of Physics-II	3	PH503	Atomic & Molecular Physics	3
PH 410	Analog & Digital Electronics	4	PH599	Project Work - II	5
Elective Courses					
PH 401	Classical Mechanics	3	PH521	Introduction to Parton Models	3
PH 504	Laser Physics	3	PH522	Communication Systems	3
PH 505	Coherent Optical System	3	PH523	Microwaves	3
PH 506	Physics of Thin Film	3	PH524	Digital Signal Processing	3
PH 507	Physics of Low Temperature	3	PH525	Microprocessor & Digital Signal Processing Based System	3
PH 509	Condensed Matter Physics & Material Science - II	3	PH526	Plasma Physics-I	3
PH 510	Fibre Optics & Optoelectronics	3	PH527	Plasma Physic - II	3
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
PH 511	Image Processing	3	PH528	Solid State Ionics	3
PH 512	Physics of Remote Sensing	3	PH529	Advanced Material Science	3
PH 513	Photonics Devices	3	PH530	Nano Structures - I	3

PH 514	Super Conductivity & Critical Phenomena	3	PH531	Nano Structure- II	3
PH 515	Physics of Integrated Circuits	3	PH532	Quantum Electrodynamics	3
PH 516	Probes of Solid State Physics	3	PH 533	General Theory of Relativity	3
PH 517	Physics of Solid State Devices	3	PH 534	Astrophysics and Cosmology	3
PH 519	Quantum Field Theory	3	PH 535	Electromagnetic Theory - II	3
PH 520	Modern Particle Physics	3	PH 536	Basic Astronomy and Astrophysics	3
PH 537	Extragalactic Astronomy and High Energy Astrophysics	3	PH 538	Introduction to Cosmology	3

Courses offered in the M. Sc. in Nanoscience and Technology

Core Courses					
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
NS 401	Quantum Mechanics	3	NS 413	Measurement & Analysis Lab - I	5
NS 402	Electronics	3	NS 414	Instrumental Methods of Analysis	4
NS 403	Computational Techniques	3	NS 415	Measurement & Analysis Lab -II	5
NS 404	Basic Polymer Science	3	NS 501	Surface Science	3
NS 405	Cell & Molecular Architecture of Cells	3	NS 502	Optical Properties of Nanostructures	3
NS 407	Statistical Physics	3	NS 503	Electrical & Magnetic Properties of Nanostructures	3
NS 408	Condensed Matter Physics	3	NS 504	Biosynthesis of Nonoparticles & Applications	3
NS 410	Nanostructures	3	NS 505	Minor Project	5
NS 411	Fundamentals of Molecular Biology & Elements of Immunology	3	NS 506	Major Project	12

Apart from the faculty members of the department of physics, classes are also taken by faculty members of the departments of Chemical Sciences and Molecular Biology and Biotechnology for M.Sc in Nanoscience and Technology course.

Facilities

The Department has a rich collection of devices and instruments related to Photonics, Electronics , Condensed Matter Physics and Nanoscience at research level in addition to general laboratory instruments for postgraduate teaching in physics. The Department has 25MW pulsed, Nd-YAG laser, High Vacuum Coating, X-band Microwave Bench, Electrochemical Workstation, LCR HiTester Meter, SEM, XRD and Spectrophotometer as major research equipment. The Department also has a computer laboratory.

Admission to the programme is being started from 2009. The process of faculty requirement, and setting up of laboratories are in progress.

DEPARTMENT OF CIVIL ENGINEERING

Admission to the programme is being started from 2009. The process of faculty requirement, and setting up of laboratories are in progress.

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

The erstwhile Department of Computer Science and Information Technology has been renamed as the Department of Computer Science and Engineering with the starting of the School of Engineering in August 2006. The department has the support of the Department of Science and Technology (DST), Govt. of India under its FIST programme since 2005. In addition to the academic programmes at the UG as well as the PG levels the department has been carrying out active research in the fields of computational theory, computer networks, mobile computing, soft computing & data mining, natural language processing, workflow management, cryptography, qualitative spatial reasoning.

Programmes offered

1. B. Tech. in Computer Science & Engineering
2. M. Tech. in Information Technology
3. Master of Computer Application (MCA)
4. Ph.D.

Faculty

Professors

Dutta M., Ph. D. (IIT, Kanpur)
Saikia D. K., Ph. D. (IIT, KGP), Dean, School of Engineering
Bhattacharyya D. K., Ph. D. (Tezpur University), Head of the Department
Sinha S. K., Ph. D. (Tezpur University)

Readers

Hazarika S.M., Ph.D. (Leeds, England)
Sharma U., Ph.D. (Tezpur University)

Lecturers

Saharia S., M.C.A (Dibrugarh University)
Borah B., M. S. (BITS, Pilani)
Sarma N., M. Tech. (IIT, KGP)
Singh S. I., M.CA (Manipur University)
Nath B., M. Tech. (Tezpur University)
Satapathy, S. S., M. Tech (Tezpur University)
Singh B., M. Tech (Tezpur University)
Das R., MCA (Dibrugarh University)
Baruah A*, M. Tech. (IIT, Kharagpur)
(*Temporary)

Courses offered in the M. Tech. in Information Technology Programme

Core Courses					
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
CS 531	Objective Oriented Programming & Design	5	IT 610	Advanced Database System	4
CS 601	Design and Analysis of Algorithms	3	CS 634	Selected Topics in Computer Networks	4
IT 611	Distributed Systems	3	IT 604	Term Project –I	8
			IT 605	Term Project- II	16
Elective Courses					
CS 502	System Software	3	CS 528	Digital Signal Processing	4

CS 505	Software Engineering	4	CS 529	Embedded Systems	4
CS 507	Computer Networks	4	CS 531	Object Oriented Programming & Design	5
CS 508	Database Management System	5	CS 532	Compiler Design	4
CS 509	Data Communication	4	CS 602	Image Processing	3
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
IT 503	Multimedia Systems	4	CS 607	Optimization Technique	3
IT 504	E-Commerce	3	CS 606	Computer Architecture & Parallel Processing	3
IT 506	Logic Programming	3	CS 610	Bioinformatics	3
IT 521	Programming and Data Structure	4	IT 509	Data Mining & Data Warehousing	4
IT 522	Computer Architecture	4	IT 510	Advanced Operating Systems	4
IT 523	Discrete Mathematics	3	CS 621	Mobile Computing	4
IT 524	Formal Language and Automata	3	CS 622	Software Testing, Quality Assurance and Maintenance	4
IT 518	Graph Theory	4	CS 623	Randomized Algorithms	3
CS 522	Computer Graphics	4	CS 624	Web Technology	4
CS 523	Enterprise Resource Planning	3	CS 625	Intelligent Assistive Systems	3
CS 524	Theory of Computation	3	CS 725	Knowledge Representation & Reasoning	4
CS 525	Artificial Intelligence	3	CS 727	Formal Verification	4
			CS 731	Data Mining in Security	4

Courses offered in the MCA Programme

Core Courses					
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
CS 404	Programming & Problem Solving	5	CS 502	System Software	3
CS 405	Discrete Mathematics	3	CS 504	Operating System	4
CS 406	Digital Logic	4	CS 505	Software Engineering	4
CS 407	Information and Communication Technology	4	CS 507	Computer Networks	4
CS 403	File Structures	2	CS 508	Database Management	5
CS 408	Data Structures	5	CS 509	Data Communication	4
CS 409	Comp. Organization & Architecture	5	CS 514	Minor Project	8
			CS 515	Major Project	16
Elective Courses					
CS 421	Graph Theory	3	CS 601	Design & Analysis of Algorithms	3
CS 422	Numerical Methods	4	CS 602	Image Processing	3
CS 423	Graphical User Interface Programming	3	CS 604	Optimization Techniques	3
CS 424	Formal Language & Automata	3	CS 605	Simulation & Modeling	4
CS 522	Computer Graphics	4	CS 606	Computer Architecture & Parallel Processing	3
CS 523	Enterprise Resource Planning	3	CS 609	Geographic Information Systems	3
CS 524	Theory of Computation	3	CS 610	Bioinformatics	3
CS 525	Artificial Intelligence	3	IT 611	Distributed Systems	3
CS 526	Management Information Systems	3	CS 621	Mobile Computing	4
CS 528	Digital Signal Processing	3	CS 622	Software Testing Quality Assurance and Maintenance	4
CS 529	Embedded System	4	CS 623	Randomized Algorithms	3
CS 530	Social & Professional Issues in Computing	3	CS 624	Web Technology	4
Core Courses					
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
CS 531	Object Oriented Programming &	5	CS 625	Intelligent Assistive Systems	3

	Design				
CS 532	Compiler Design	4	BM 421	Accounting & Financial Management	3
IT 503	Multimedia Systems	4	MS 405	Probability & Statistics	4
IT 504	E-Commerce	3	BM 504	Managerial Economics	4
IT 509	Data Mining & Data Warehousing	4			

Facilities

The Department has several state-of-the-art computer laboratories with a host of servers, workstations and a large number of PC terminals connected to the campus-wide LAN with access to the Internet. The systems run on wide variety of operating systems including Linux, Windows NT/XP/2000, Sun Solaris, Novel Intra Netware, etc. The laboratory is equipped with up-to-date office automation software, DBMS packages, graphics and animation packages, multimedia authoring packages, GIS packages, Web servers & browsers, Lotus Domino server, Matlab, Mathematica, Matrox, SPSS in addition to the various state-of-the art compilers and programming environments. The network laboratory is equipped with wireless and wireline network equipment, LAN trainers, internet security trainers etc. There is a hardware laboratory equipped with various training kits, experimental setup, analyzer equipment etc.

Departmental Library

The Department has a library with a collection of more than 1000 book volumes in the field of computer science and information technology. The library also receives 8 international and 3 national journals in the field of computer science in addition to those at the central library.

Scholarship

M. Tech. students with GATE qualification are eligible for scholarship of Rs. 5000/- per month from AICTE. Other M. Tech., B. Tech. and MCA students have also been receiving scholarships from other sources such as NEC.

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

The Department started functioning with the first batch of students admitted into the M. Tech. in Electronics Design & Technology course in 1997. This course has been designed with an aim to meet the industry requirements in the field of Electronics with emphasis on latest technological developments. From August, 2004 the Department has started a new programme "M. Tech. in Bioelectronics" approved by the UGC under its innovative Programmes - Teaching and Research in interdisciplinary and emerging areas. The courses, designed with interdisciplinary relevance, aims at producing professionals in the fields of medical, food safety, agriculture, defense, biotech and biosensor industries. Both courses have been recognised by AICTE. The Department has also started B. Tech. programme in Electronics and Communication Engineering from August 2006.

Programmes offered

1. B. Tech. in Electronics & Communication Engineering
2. M. Tech. in Electronics Design & Technology
3. M. Tech. in Bioelectronics
4. Ph. D.

Faculty

Professor

Bhuyan M., Ph.D. (Gauhati University)
Sahu P. P., Ph.D. (Jadavpur University), Head of the Department

Readers

Bhattacharyya S., Ph. D. (Delhi University)
Dutta J. C., Ph.D. (Jadavpur University)

Lecturers

Sharma S., M. Tech. (Tezpur University)
Roy S., M. Tech. (Tezpur University)

Chutia R., M. Tech. (Tezpur University)
Deka B., M. Tech. (Tezpur University)
Hazarika D., M. Tech. (IIT, Guwahati)
Kakoty N.M., M.Tech. (Tezpur University)
Nath V.K., M.Tech. (Tezpur University)

Courses offered in the M. Tech in Electronics Design & Technology programme

Core Courses					
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
EL516	Design of Fine Mechanics and Power Devices	4	EL 521	Design & Technology of Electronic devices	4
EL 517	Physical and Industrial Design of Electronic Systems	4	EL 522	Intelligent Instrumentation	5
EL518	VLSI Design	5	EL 523	Avanced Programming Language	5
EL 519	Design of Digital Systems	5	EL528	Seminar-I	1
EL520	Quality and Reliability Engineering	4	EL 529	Seminar -II	1
			EL 601	M. Tech. Project (2 semesters) dissertation	24
Elective Courses					
EL 525	Data Communication	5	EL 524	Modeling and Simulation	5
EL 527	Information Systems	5	EL 526	Application Software	5

Courses offered in the M. Tech. in Bioelectronics programme

Core Courses					
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR

BE 501	Basic Bioelectronics	4	BE 509	Biomathematics	3
BE 502	Advanced Bioelectronic Devices	4	BE 510	Bioelectronic Systems & Controls	3
BE 503	Biomedical Signal Processing	5	BE 511	Basic Bio-electronics lab	4
BE 505	Bioinspired Systems & Engineering	4	BE 512	Advanced Bioelectronics Lab	4
BE 506	Biomedical Image Processing	4	BE 514	Seminar	1
BE 504	Neuroengineering	3	BE 601	M. Tech Dissertation (2 semesters)	24
Elective Courses					
BE 507	Bioinformatics	4	BE 513	Biomedical Electronics	4
BE 508	BioMEMS & Nanotechnology	4			

Facilities

Digital Laboratory: There are a good number of analog and digital ICs and their application facilities, logic analysers, microprocessors, microcontrollers, data acquisition cards, stepper motor controller cards, relay & opto-coupler interfacing cards, etc.

Instrumentation Laboratory: It is equipped with temperature transducers - thermocouple, IC sensors, Multi-channel temperature indicators, Load cell indicator, humidity sensor, sensor interfacing to PC, Industrial type of remote transmitter, PC based stepper motor, Servo motor driver, etc.

PCB Fabrication Facilities: It is equipped with Art work table, magnifier, photo resist U. V. exposure unit, photo resist coating whirler, sprayer, oven etching machine, guillotine shearing machine, high speed drill, roller tining machine and all necessary chemicals.

Computer Laboratory: Computer hardware consists of Pentium based PCs attached to a LAN server by powerful Pentium Based Novel Network consisting of about 25 terminals all connected to Internal Server.

Software: There are up-to-date office automation software, ORACLE, Web Server & browser, MATLAB, Circuit Simulator like MICROSIM, PCB layout, CPLD-FPGA Electronic Design Automation (EDA) software, High Performance Data Acquisition - Control- Manipulation Software – GENIE, Lab View, XILINX, ORCAD.

Mechanical Workshop: It is equipped with the following machines: Lathe, High Speed Drilling, Milling, Turning, Wood Working Grinding, Shearing, Cutting, Bending, Electric Welding Plastic Welding, etc.

Bioelectronics' Engineering Laboratory: Robotics, vision development with Lab view, E-nose, Insectronics, Device Simulator.

Biomedical Laboratory: ECG, EEG, etc.

Laboratories for B. Tech. programme:

- (1) Basic Electrical Engineering Laboratory
- (2) Basic Electronics Engineering Laboratory
- (3) Electrical Machine Laboratory
- (4) Electronics Device Laboratory
- (5) Instrumentation Laboratory
- (6) Communication Laboratory

- (7) Digital Logic Laboratory
- (8) Control Laboratory
- (9) Microprocessor Laboratory
- (10) Signal Processing Laboratory
- (11) Microwave Engineering Laboratory

Departmental Library:

The Departmental Library has a good number of books relevant to the curriculum.

DEPARTMENT OF FOOD PROCESSING TECHNOLOGY

The department of Food Processing Technology, Tezpur University was established in 2006 and was offering M. Sc. programme from August 2006. The M.Tech. programme in Food Processing Technology will be offered by the department from August 2009. The M.Tech. programme in Food Processing Technology is the first of its kind to be offered by any university in North East India. The M. Tech. syllabus is structured to fulfill two main objectives; firstly, to generate manpower that is trained and educated in all spheres of food processing relevant to the rapidly growing food industries and secondly, to equip the graduates with skills and knowledge to succeed as entrepreneurs. In the preparation of the present syllabus, besides laying stress in the core areas like processing, engineering, chemistry, microbiology, analysis and packaging of foods, emphasis is given on the learning of technologies in detail for processing various foods. Adequate emphasis is given on laboratory work. Industrial training and visits to food industries are included in the programme to further reinforce practical experience of the students.

Programmes offered

M. Tech. in Food Processing Technology
Ph. D.

Faculty

Professor

Mahanta C. L., Ph. D. (CFTRI, Mysore), Head of the Department

Reader

Deka S. C., Ph. D. (Haryana Agricultural University, Hisar)

Lecturer

Sit N., M. Tech. (G. B. Pant University of Agriculture & Technology, Uttarakhand)

Courses offered in the M. Tech. in Food Processing Technology

Core Courses					
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
FP 400	Principles of Food Processing	2	FP 519	Design of Food Processing Equipment	3
FP 402	Food Chemistry	3	FP 600	Simulation & Modeling	4
FP 403	Food Analysis	3	EL 475	Basic Electrical & Electronics	4
FP 405	Biochemistry and Nutrition	4	EL 476	Instrumentation & Control in Food Processing	4
FP 411	Food Process Engineering	3	CS 451	Computer Fundamentals & Programming	3
FP 513	Business Management	3	MS 400	Applied Mathematics & Statistics	4
FP 514	Quality Control in Food Processing Industries	4	BT404	Microbiology	4
FP 515	Advanced Food Engineering	5	BT 422	Food Microbiology	3
FP 516	Packaging & Storage Technologies	3	FP 615	Seminar	1
FP 417	Food Plant Design & Product Development	4	FP 616	Mini project	6
FP 518	Emerging Technologies in Food processing	2	FP 617	Major Project	18
FP 407	Technology of Cereals and Legumes	3	FP 601	Computational Methods in Engineering	3
FP 408	Technology of Milk and Milk Products	3	FP 602	Bioprocess Engineering	3
FP 409	Technology of Fruits and Vegetables	3	FP 603	Optimization Techniques	3

FP 410	Technology of Plantation Products	3	FP 604	Food Rheology	
FP 503	Technology of Fish, Meat and Poultry	3	FP 605	Drying & Dehydration	
FP 504	Technology of Oilseeds and Fats	3	FP 606	Heat & Mass Transfer	
FP 520	Waste Management & Byproduct Utilization in Food Industries	3	BT 412	Fermentation and Process Control	
FP 521	Food Supply Chain Management	3	BT 417	Food Biotechnology	
FP 522	Novel Separation Techniques	3			

Facilities

The Department is well equipped with equipment for analysis and processing of fruits, vegetables, rice, meat, etc. The Department is also in the process of purchasing many sophisticated equipments shortly. The university library is well stocked with basic and advanced text books. Electronic journals and print journals on Food Processing Technology are available.

DEPARTMENT OF MECHANICAL ENGINEERING

The Department of Mechanical Engineering was started in July, 2006 under School of Engineering initially for offering B. Tech. degree in Mechanical Engineering. The aim of the department is to produce well trained and motivated manpower in the field of Mechanical Engineering discipline as per present industrial requirements. The department has the vision of starting research activities with introduction of M.Tech and Ph.D. programme in the appropriate specialization of mechanical engineering in near future.

Programme offered

B. Tech in Mechanical Engineering

Faculty

Lecturers

Gogoi T. K., M. Tech. (IIT, Kharagpur)
Dutta P. P., M. Tech. (Tezpur University)
Kalita, P, M. Tech. (Institute of Technology, BHU)
Dutta P. P. M.E. (Birla Institute of Technology, Mesra)
Kirtania S. M. Tech (IIT, Guwahati)

Facilities

Laboratories:

Strength of Material Laboratory: The laboratory is well equipped with Computerized Universal Testing Machine, Impact Testing Machine, Brinell Hardness Tester, Rockwell Hardness Tester and Vicker's Hardness Tester, etc.

Fluid Mechanics Laboratory: The laboratory is equipped with Hydraulic Benches, Flow Meter demonstration module, Flow through Weir Apparatus, Energy loss in bend Module, Osborne-Reynolds Apparatus, Bernoulli's Apparatus, Orifice Discharge Apparatus and Impact of Jet Apparatus, etc.

Theory of Machine and Mechanism Laboratory: This laboratory is equipped with equipments like Universal Governor Apparatus, Gyroscope, Whirling of Shaft Apparatus, Static and Dynamic Balancing Apparatus, etc.

Kinematics Laboratory: This laboratory has different types of gear model, clutch model, belt drive model, mechanism model, and cam drive model, cut-section internal combustion engine model etc. for demonstration to students.

CAD/CAM Laboratory: This laboratory is equipped with latest version of design and analysis software like Pro-Engineer Wildfire (latest version), etc.

Workshop:

The workshop is equipped with a number of conventional centre Lathe Machines, Radial Drilling Machine, Slotting Machine, MIG Welding Machine. The department has a production type CNC Lathe Machine, Universal Milling Machine, Horizontal Milling Machine, Vertical Milling Machine, Shaping Machine, Universal Tool & Cutter Grinder, Surface Grinding Machine, Pedestal Grinding Machine, High Speed Precision Lathe Machine, Pillar Drilling Machine, Arc Welding Machine very and will procuring few other sophisticated machinery shortly.

The other Laboratories like **vibration laboratory, turbo machinery laboratory, metrology laboratory, thermal science laboratory, automobile engineering laboratory** will likely to be started shortly (Under Processing).

DEPARTMENT OF ENERGY

Initially, a centre for Non-conventional Energy was established in the University in 1995, which offered a One-Year Diploma Programme in Non-conventional Energy Tech. The centre was converted to a Department of Energy in 1996, with an aim to produce a manpower pool in the field of Energy at different levels, develop new and efficient Energy technologies and carry out research, development and extension activities in diverse areas of energy. The thrust areas of research are Biomass Energy, Solar Energy, Wind Energy, Hydro Energy and Energy Management.

Programmes offered

1. M. Tech. in Energy Technology
2. Ph. D.

Faculty

Professors

Konwer D., Ph. D. (Punjab University)
Samdarshi S. K., Ph. D. (IIT, Delhi), Head of the Department

Readers

Deka D., Ph. D. (Tezpur University)
Baruah D. C., Ph. D. (Punjab Agricultural University)

Lecturers

Mahapatra S., M.Tech. (Jadavpur University)
Kataki R., Ph. D. (Tezpur University)

Courses offered in the M. Tech. in Energy Technology programme

Core Courses					
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
EN 566	Fuel Technology	3	EN 567	Power Plant Engineering	3
EN 568	Biomass Energy	3	EN 569	Solar Energy Utilization	3
EN 570	Heat Transfer	3	EN 571	Other Non-conventional Energy Sources	3
EN 572	Energy, Ecology & Environment	3	EN 573	Energy Management and Auditing	3
EN 574	Energy, Economics & Planning	3	EN 575	Numerical Methods & Computational Techniques	3
EN 576	Energy Lab - I	2	EN 577	Energy Lab - II	2
	Elective - I	3		Elective - II	3
EN 578	Major Project (Part - I)	8	EN 579	Major Project (Part - II)	16
Elective Courses					
EN 584	Advanced Bio-energy	3	EN 585	Advanced Solar Thermal Energy	3
EN 586	Solar Photovoltaic Energy	3	EN 587	Petroleum Refining	3
EN 588	Petroleum Exploration, Drilling & Production	3	EN 589	Wind Energy Utilization	3
EN 590	Hydrogen Energy & Fuel Cell	3	EN 591	New Energy Technologies	3

Facilities

Laboratory

The Department is equipped with various equipments such as Gas Chromatograph, Computerized power meter, Bomb Calorimeter, Biomass gasifier system, Solar radiation measuring equipment, Wind speed direction measuring equipments,

Wind electric generator, Briquetting machine, Petroleum products testing equipments, Fibertech apparatus, Toxic Gas analyzer, Carbon-Hydrogen analyzer UV-visible spectrophotometer, TOC Analyser, Petrol and Diesel Engine Test setup, Hydrocarbon type Analyser, Pyrolyser, Adiabtic Bomb Calorimeter, TBP Apparatus, Duel Fuel Engine, Vaccum Distillation Apparatus and various renewable energy systems, Microhydel test set-up, Research Radiometer, Solar thermal collector test set-up, Solar Dryer.

Departmental Library

A good number of books, video cassettes and CDs on Energy are available for the students, A number of national and international journals related to different areas of energy are also being subscribed.

Scholarship

MHRD fellowships are available for GATE qualified candidates. NEC fellowships are available for the students from North East regions. Ministry of New & Renewable Energy (MNRE), Government of India offers fellowship for Ph.D. students' up to Rs. 15,000/- per month under its National Renewable Energy Fellowship Schemes on the basis of GATE score. University fellowships are provided to the Ph. D. students. Two fellowships are offered by the UGC to the meritorious students enrolled for Ph.D in the department.

DEPARTMENT OF ENVIRONMENTAL SCIENCE

The Department was established in 2003 with the objective of imparting education on regional and global environmental issues. The curriculum for the M. Sc. programme focuses on all important aspects of Environmental Science covering contemporary problems of natural resource conservation and environmental quality. Thrust areas of research include Environmental Pollution, Greenhouse gas emission, Riverine Hazards, Regional and Local Climate, Geomorphology, Pollution remediation and Biodiversity conservation.

Programmes offered

1. M. Sc. in Environmental Science
2. Ph. D.

Faculty

Professor

Baruah K. K., Ph. D. (PAU, Ludhiana), Dean, School of Energy, Environment and Natural Resources.

Reader

Sarma K. P., Ph. D. (NEHU, Shillong), Head of the Department

Lecturers

Das A. K., Ph. D (JNU, New Delhi)

Hoque R. R., Ph. D. (JNU, New Delhi)

Devi Kh. A., Ph. D. (NEHU, Shillong)

Courses offered in the M. Sc. in Environmental Science programme

Core Courses					
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
ES 501	Fundamentals of Environmental Science	3	ES 511	Environmental Pollution	4
ES 502	Elements of Ecology	3	ES 512	Environmental Plant Physiology and Biochemistry	4
ES 503	Environmental Chemistry	3	ES 513	Environmental Impact Assessment	3
ES 504	Instrumental Methods of Analysis	3	ES 514	Waste Management	3
ES 505	Natural Hazards	2	ES 515	Impact of Agriculture on Environment	3
ES 506	Basics of Computer Science	3	ES 516	Global Climate Change and its Impacts	3
ES 507	Environmental Biology	3	ES 517	Soil Chemistry and Plant Growth	3
ES 508	Environmental Physics	4	ES 518	Environmental Laws & Policies	2
ES 509	Geo-Science	3	ES 519	Seminar in Environmental Science	1
ES 510	Energy and Environment	3	ES 500	Projects/ Dissertation	10
Elective Courses					
ES 520	Cell Biology	2	ES 525	Environmental Microbiology	2
ES 521	Photosynthesis & Respiration	2	ES 526	Pesticides in relation to environment	2
ES 522	Soil Science	2	ES 527	Agro-forestry	2
ES 523	Human Population, Social Issues and the Environment	2	ES 528	Bio-diversity	2
ES 524	Bio-Statistics	2			

Facilities

The Department has a sophisticated instrumentation laboratory to facilitate research and other academic activities. The laboratory has the following equipments: Laser Leaf Area Meter with Root Measurement Attachment, Light Meter, Portable Photosynthesis Systems, two Gas Chromatographs, High Precision Electronic Balance, UV-VIS Spectrophotometer, Ion meter, ultra centrifuge, Respirable dust sampler and Flame Photometer.

DEPARTMENT OF CULTURAL STUDIES

The Department was established in 1995 with an aim to impart theoretical as well as methodological teachings in Cultural Studies and to develop manpower to study the rich, diverse and varied cultures of the North East India. The thrust areas of research are folklore, culture, heritage as well as linguistic and ethnic studies of Assam and other regions of North East.

Programmes offered

1. M. A. in Cultural Studies (Modular)
2. Ph. D.

Faculty

Professor

Dutta S. K., Ph. D. (Visva-Bharati), Head of the Department

Reader

Sarma, P. M., Ph.D (Gauhati University)

Lecturers

Goswami M, M. Phil. (Delhi University)

Dutta P., M. Sc. (Gauhati University)

Courses offered in the M. A. in Cultural Studies programme

Core Courses					
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
CT 401	Culture, Society and Tradition- I	5	CT 501	Culture, Society and Tradition- II	4
CT 402	Folkloristics-I	4	CT 502	Folkloristics-II	5
CT 403	Language as related to Culture	4	CT 503	Research Methodology	5
CT 404	Visual and Performing Arts	5	CT 505	Cultural and Literary Theories: Recent Trends	5
CT 405	Culture & Society (N.E Indian Perspective)	5	CT 506	Art and Aesthetics: An Introduction	5
CT 406	Indian Society: Structure and Change	5	CT 507	Elements of Semiotics	5
CT 408	Literatures of N.E India	4	CT 508	Dissertation	5
CT 407	Literature as related to Culture	4			
Elective Courses					
CT 504	Cultural Conservation	4	CT 510	North East Indian Folklore Studies	4
CT 509	Cultural Tourism	4			

Facilities

Departmental Library

Apart from the Departmental Library, the Department has its own library, the Pratibha Kath Hazarika Memorial Library.

The Department has a cultural museum and a studio equipped with audio-visual teaching aids.

DEPARTMENT OF ENGLISH AND FOREIGN LANGUAGES

The Department, which was established in 1994, aims to provide instruction and carry out research in English Literature, Women's Writing in English, New Literatures in English, American Literature and Indian Writing in English, English Language Teaching, and Linguistics.

Programmes offered

1. M.A. in English
2. One Year Certificate Course in Chinese (Full Time)
3. Ph. D.
4. Short-term courses in basic French and Chinese

Faculty

Professors

Sarma M. M, Ph. D., (Dibrugarh University), Head of the Department
 Danta B. K., Ph. D., (Utkal University), Dean, School of Humanities and Social Sciences

Readers

Das P. K., Ph. D., (Gauhati University)
 Barbora M., Ph. D., (Tezpur University)

Lecturers

Borah G. K., Ph. D., (NTNU, Trondheim, Norway)
 Mohapatra D., M. Phil., (CIEFL, Hyderabad)
 Medhi H., M. Phil., (Delhi University)
 Kundu D., M. A., (Chinese) (Viswa-Bharati)
 Chakraborty R., M. Phil. (Chinese) (JNU, New Delhi)
 Narzary R, M. A., (NEHU, Shillong)

Courses offered in the M.A. in English programme

Core Courses					
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
EG 421	Medieval & Renaissance Literature	3	EG 429	Theory of Criticism II	4
EG 422	Literature of Renaissance and Restoration	3	EG 430	Literature and Culture: 1780 - 1830	4
EG 423	Renaissance to Enlightenment: Literature and Thought	3	EG 431	Literature and Culture: 1830 - 1900	4
EG 424	Theory of Criticism I	3	EG 548	20 th Century Literature: Poetry and Drama	4
EG 425	Structure of English and English Phonetics	3	EG 549	20 th Century Literature: Non-fictional Prose and Fiction	4
EG 426	Introductory Linguistics I	2	EG 550	Post colonial Literature in English	4
EG 427	Introductory Linguistics II	3	EG 551	American and Canadian Literature in English	4
EG 428	Introduction to ELT	3	EG 552	Communication and Media	3
Elective Courses					
EG 561	Genre Study: Fiction I	3	EG 575	Linguistics I	3
EG 562	Genre Study: Fiction II	3	EG 576	Linguistics II	3

CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
EG 563	Gender and Literature I	3	EG 577	Cognitive Grammar I	3
EG 564	Gender and Literature I	3	EG 578	Cognitive Grammar II	3
EG 565	Indian Writing in English I	3	EG 580	ELT - I	3
EG 566	Indian Writing in English II	3	EG 581	ELT - II	3
EG 567	Literature of the USA I	3	EG 585	Dissertation	6
EG 568	Literature of the USA II	3			

Courses offered in the One Year Certificate in Chinese (Full Time) programme

CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
CL 401	Reading Chinese Text -I	3	CL402	Reading Chinese Text-II	3
CL 403	Comprehension and Translation	3	CL404	Composition and Translation	3
CL405	Introduction to China-I	3	CL406	Introduction to China -II	3
CL407	Chinese Oral Skills -I	3	CL408	Chinese Oral Skills-II	3

Facilities

Digital Language Laboratory

The department has a digital multimedia, multipurpose language laboratory with fifteen booths. Students can improve their pronunciation of English and foreign languages (Chinese and French at the moment) and develop interactive language skills by utilizing the software and other facilities available in the Laboratory.

Departmental Library

Selected books and photocopied materials relating to literature, linguistics and ELT are available in the Departmental Library. The department also has a collection of audio cassette of English Pronunciation and spoken English and a number of video CDs on literary texts.

The department has a small computer Laboratory for use of students and research scholars.

DEPARTMENT OF MASS COMMUNICATION AND JOURNALISM

The Department was started in 2001 to provide training in Journalism and Mass Communication and undertake researches in tune with changing needs of the society. The thrust areas of the Department are mass communication and community media, laying emphasis on theories and practice of communication and media by imparting skills in Radio, Television, Newspaper, New Media, Advertising and Public Relations productions.

Programme offered

M. A. in Mass Communication and Journalism

Post Graduate Diploma in Community Communication (part time)

Faculty

Readers

Anbarasan P., M. Phil. (JNU, New Delhi)

Arul Selvan K. S., Ph. D. (Manipal) Head of the Department

Lecturers

Chakraborty, J., MMC (Silchar)

Pegu U. K., MMC (Silchar)

Kabi Kh. M. A. (Communication) (Chennai)

Nagaraju A. M. A (Communication) (Hyderabad)

Course offered in the M.A. in Mass Communication and Journalism programme

	COURSE CODE	COURSE TYPE	COURSE TITLE	CR
Semester 1	MC451	Core	Introduction to Communication	3
	MC452	Core	Reporting and Writing	4
	MC453	Core	Advertising and Public Relations	3
	MC454	Core	Evolution of Indian Media	3
	MC455	Core	Understanding New Media	3
	MC456	Core	Visual Communication	3
	MC457	Core	Foundations of Journalism I	1
Semester 2	MC458	Core	Media Law and Ethics	3
	MC459	Core	Communication Research Methods	3
	MC460	Elective G A	Reporting and Editing	4
	MC461	Elective G A	Advanced Advertising and Public Relations	4
	MC462	Core	Broadcast Media Production	3
	MC463	Core	Online Journalism I	3
	MC464	Core	Foundations of Journalism II	1
Semester 3	MC465	Core	Political and Cultural Communication	3
	MC466	Core	Development Communication	3
	MC467	Elective G A	Specialised Reporting	4
	MC468	Elective G A	Marketing Communication	4
	MC469	Elective G B	Multi Camera Production & Documentary	3
	MC470	Elective G B	Online Journalism II	3
	MC471	Elective G B	Communication Theories	3
	MC472	Elective G B	Radio Production I	3
	MC473	Core	Foundations of Journalism III	1
	MC474	Core	Internship I	3
	MC475	Core	Communication Research Project	4

	COURSE CODE	COURSE TYPE	COURSE TITLE	CR
Semester 4	MC476	Core	International Communication	3
	MC477	Core	Film Studies	3
	MC478	Elective G A	Analytical and Opinion Writing	4
	MC479	Elective G A	Media Management	4
	MC480	Elective G B	Post Production – Editing	3
	MC481	Elective G B	Multimedia Journalism	3
	MC482	Elective G B	Advanced Communication Research Methods	3
	MC483	Elective G B	Radio Production II	3
	MC484	Core	Foundations of Journalism IV	1
	MC485	Core	Internship II	3

Course Selection

1. Core Papers – It is compulsory for every student who have enrolled for the respective semesters
2. Electives Group A – In each semester, students have an option to select one stream out of available that is Journalism / Advertising and Public Relations.
3. Electives Group B – In each semester, students have an option to select one elective out of available.

Course offered in the PG Diploma in Community Communication programme (Part-time)

	Code	Subject	CR
Semester 1	MC201	Understanding Development	3
	MC202	Community and Communication	3
	MC203	Participatory Communication	3
	MC204	Writing for the Media	3
	MC205	Radio Production	3
	MC206	Internship - I	3
Semester 2	MC207	Development and India	3
	MC208	Advocacy for Community Development	3
	MC209	Community Media	3
	MC210	Basics of New Media	3
	MC211	Video Production	3
	MC212	Internship - II	3

Facilities

The Department is endowed with specialized equipment for print, TV, and web journalism. These include industry grade digital video cameras, linear and non-linear editing suites, all in broadcast quality. Students get hands-on experience in multi camera production in the well-equipped studio. An exclusive multimedia lab with latest software enables students to gather expertise in the nuances of different media productions. A well equipped screening room with a 100 seat capacity for the screening and discussion of short films.

The Central library has a collection of more than 3000 books related to all core and allied areas of mass communication. The University also subscribes to 20 national and international research journals for the Department.

Productions

Students as part of their academic curriculum produced lab journals, audio programmes, web designs, brochures, TV news bulletin, documentary films and traditional communication programmes like puppet shows and street plays.

Visiting Faculty

The Department invites scholars and professionals from different parts of the country for extra inputs on knowledge and skills.

DEPARTMENT OF SOCIOLOGY

The major objective of the programme is to disseminate knowledge in sociological theory and method with a view to creating a pool of trained manpower that is sensitive to the regional specificities with a national global perspective.

Programmes offered

1. M. A. in Sociology
2. Ph. D.

Faculty

Professor

Karna, M. N., Ph. D. (Patna University)

Reader

Sharma, C. K., M. Phil., Ph. D. (Delhi), Head of the Department

Lecturer

Deka, R., M. A. (Pune University)

Das, A. K., M. Phil. (Delhi University)

Courses offered in the M. A. in Sociology Programme

Core Courses					
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
SC 401	Sociological Theories - I	5	SC 407	Political Sociology	5
SC 402	Sociological Theories - II	5	SC 408	Research Methodology	5
SC 403	Sociology of Kinship	3	SC 501	Industrial Sociology	4
SC 404	Social Stratification	5	SC 502	Social Demography	4
SC 405	Sociology of India	5	SC 503	Social Movements in India	4
SC 406	Economic Sociology	4	SC 504	Sociology of Northeast India	4
			SC 505	Project	6
Elective Courses					
Students will choose <i>any four</i> from the- following:					
SC 521	Sociology of Medicine	4	SC 525	Environmental Sociology	4
SC 522	Quantitative Sociology	4	SC 526	Sociology of Development	4
SC 523	Sociology of Culture and Mass Media	4	SC 527	Gender and Society	4
SC 524	Criminology	4			

DEPARTMENT OF BUSINESS ADMINISTRATION

The Department of Business Administration came into existence in 1995 with the objective of producing quality management professionals and carrying out research in the areas of Finance, Human Resources, Marketing, Production and Systems Management. The Department also offers a Programme on Tourism Management. Management development programmes are organised from time to time.

Programmes offered

1. PG Diploma in Tourism Management*
(This is a Modular programme. A student can opt for a certificate after successful completion of the first semester; *Likely to be upgraded to MTM)
2. Master of Business Administration (MBA)
3. Master of Business Administration, Part-time (MBA)
4. Ph. D.

Faculty

Professor

Khanka S. S, Ph. D. (Kumaun University) (on lien to NIFM, Faridabad)

Readers

Goswami Chandana., Ph. D. (Gauhati University), Head of the Department

Sarma M. K., Ph. D. (Tezpur University)

Sarkar S. S., Ph. D. (Tezpur University)

Goswami C., Ph. D. (Tezpur University)

Baruah P., Ph. D. (Tezpur University)

Lecturers

Sarma, T. R., MBA (Gauhati University)

Barpujary, H., M.CA (Tezpur University)

Roy, A., M.B.A. (Tezpur University)

Prakash, G., M.M.S. (Allahabad University)

Mahanta, K., M.B.A. (Assam University)

Courses offered in the PG Diploma in Tourism Management programme

Core Courses					
CODE	COURSE NAME	CR	CODE	COURSE NAME	CR
TM 411	Fundamentals of Tourism	4	TM 412	Destination Geography, -History and Heritage	4
TM 413	Leisure Delivery System	4	TM 414	Inter Personal Skills	4
TM 415	Information Based Management	4	TM 424	Tourism Practices	4
TM 421	Management Fundamentals	2	TM 422	Finance and Accounting for Tourism	4
TM 423	Tourism Entrepreneurship	4	TM 416	Term Paper	4
TM 425	Resort Management	4	TM 426	Project	6

Facilities

The Department is well equipped with educational facilities like state of the art computer laboratory and instructional aids like T.V., video cassettes, LCD Projector, OHP camcorder etc. The department has an air conditioned board room for facilitating case study, group discussion etc.

SECTION SIX

MODEL QUESTION PAPERS

MODEL QUESTIONS**PAGE NO.**

♦ M. TECH. IN INFORMATION TECHNOLOGY	63
♦ P.G. DIPLOMA IN TOURISM MANAGEMENT	64
♦ M. A MASS COMMUNICATION & JOURNALISM	65
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♦ M. SC. IN MOLECULAR BIOLOGY AND BIOTECHNOLOGY	71
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♦ M. SC. (INTEGRATED) IN BIOSCIENCE AND BIOINFORMATICS	92
♦ INTEGRATED M.SC. IN CHEMISTRY	94
♦ INTEGRATED M.SC. IN PHYSICS	94
♦ INTEGRATED M.SC. IN MATHEMATICS	95

M. TECH. IN INFORMATION TECHNOLOGY

Total Marks : 100

Time : 2 hrs

The question paper consists of three Sections A, B and C.

- Section A consists of 40 multiple choice questions of 1 marks each, section B consists of 15 short questions of 2 marks each and Section C consists of conventional questions on Programming in C of total 30 marks.
- The topics covered in the test are - Programming in C, Computer Organization , Data Structure (in C) , DBMS, Digital Logic, System Software, Operating System and Theory of Computation.
- Answers to the questions should appear in the space provided and nowhere else.
- There will be no negative marks but no partial credit will be given for questions in section A.

SECTION - A

Give the correct or the most appropriate answer to the following questions from the options provided by writing the corresponding letter(s) A, B, C, D or E in the space marked as Ans _____. For questions with more than one correct alternative, all correct alternatives must be mentioned for the answer to be correct. Each of the following questions carries 1 (one) mark.

- Q1. Randomized Quicksort is an extension of Quicksort where the pivot is chosen randomly. What is the worst case time complexity of sorting n numbers using randomized Quicksort?
A. $O(n)$ B. $O(n \log n)$ C. $O(n^2)$ D. $O(n!)$ E. None of them Ans _____
- Q2. Consider a set of n tasks with known runtimes r_1, r_2, \dots, r_n to be run on a uniprocessor machine. Which of the following processor scheduling algorithms will result in the maximum throughput?
A. Round-Robin B. Shortest-Job-First C. Highest-Response-Ratio-Next
D. First-Come-First-Served Ans _____
- Q3. Which of the following Normal form will eliminate the transitive dependency -
A. first-normal form B. Second-normal form
C. third-normal form D. Boyce-Codd normal form
E. None of these Ans _____
- Q4. Which of the following statements are not true?
A. Both TCP and UDP provides congestion control
B. UDP is mainly used for transporting packets belonging to real-time multimedia applications
C. TCP is used for reliable transfer of data packets
D. TCP provides flow control through Receiver's Advertised Window Ans _____

SECTION - B

For the following questions write the answers in the space marked as Ans:- . The answers should be concise & precise. Each of the following questions carry 2 (two) marks.

- Q1. Consider a relation scheme $R = (A, B, C, D, E, H)$ on which the following functional dependencies hold: $\{A \twoheadrightarrow B, BC \twoheadrightarrow D, E \twoheadrightarrow C, D \twoheadrightarrow A\}$. What are the candidate keys of R ?

Ans:-

- Q2. What will be the output of the following C program segment?

```
a=0;
if (fork() == 0)
    { a = a + 7; printf(" %d \n", a);}
else    { a = a - 7; printf(" %d\n", a); }
```

Ans:-

- Q3. An organization has a class B network and wishes to form subnets for 64 departments. What would be the subnet mask?

Ans:-

- Q4. Give a finite automaton with output (i.e. a Moore machine) which takes as input a binary number starting from least significant bit to most significant bit and produces its 2's complement as output.

Ans:-

SECTION - C

For the following questions write the intermediate steps clearly as they carry partial credit. The answers must preferably be restricted to the space provided. Credit for each question is of 10 marks.

Q1. Write a program in C which takes an integer as input and prints the 2's complement representation of the integer using 32 bits.

Q2. Write a function in C with the prototype *int strcmp (char *s, char *t)*, which returns

-1: if string *s* is earlier than string *t* in the lexicographic ordering

1: if string *t* is earlier than string *s* in the lexicographic ordering

0: if the strings *s* and *t* are identical

Also write the main program to test the function.

Ans:-

P.G. DIPLOMA IN TOURISM MANAGEMENT

The Written Test consists of the following : No negative marks for wrong answers

1. Test of GK : 40 marks; 2. Test of reasoning : 30 marks; 3. Test of English : 30 marks.

Total marks : 100

Time : 2 hours

General Knowledge :

- Which is the largest sugarcane producing state in India ?
(a) Bihar (b) Andhra Pradesh (c) Uttar Pradesh (d) Assam
- Which particular city is known as the "Garden City" of India ?
(a) Mysore (b) Bangalore (c) Agra (d) Varanasi
- Mother Teresa arrived in India from Europe in the year
(a) 1910 (b) 1921 (c) 1929 (d) 1939
- What is the name of the currency of Russia ?
(a) Mark (b) Yen (c) Ruble (d) Peso

English : Which of the Phases marked (1), (2) and (3) given below should replace the phrase given in bold in the following sentences.

- She cooks, washes dishes, does her homework and take relaxing.
i) relaxing then ii) then relaxes iii) then relaxing iv) take relaxes v) no correction required
- Fill in the blanks with the help of the alternatives given below
Charles Darwin was (6) to his studies to a point of madness. However, his findings (7) fruits when he got success in propagating the evolutionary principles. According to this theory, there is always (8) for existence or the (9) of the fittest. this theory taught man to (10) Himself to his prevailing environment.
Q. 6. (a) Addicted (b) Devoted (c) Given (d) Recommended
Q. 7. (a) Bore (b) Gave (c) Carried (d) Indicated
Q. 8. (a) Efforts (b) Striving (c) Struggle (d) Fight
Q. 9. (a) Life (b) Survival (c) Dominance (d) Destruction
Q. 10. (a) Adapt (b) Adopt (c) Adept (d) Adhere

Reasoning :

- the age of a man is three times the sum of the ages of his two sons. Five years after, his age will be double the sum of the ages of his sons. The father's present age is
(a) 40 years (b) 45 years (c) 50 years (d) 55 years

2. A town 'P' is located in a particular district. The town 'A' is West of P. Town 'T' is East of 'P'. Town 'K' is East of 'B' but West of 'T' and 'A'. They are all in the same district. Which town is the farther West ?
(a) P (b) K (c) B (d) A

Non-Verbal Reasoning :

1. 1 2 3 4

2. I II III IV V

In above set of figures (I) to (IV), some parts are shown to change their positions in a regular direction. Following the same sequence, which one of the following will appear at the fifth stage ?

(a) (b) (c) (d)

Answers :

General Knowledge : 1(b), 2(c), 3(a), 4(c), 5(c)

English : 1(2), 6(b), 7 (a), 8(c), 9(b), 10(a)

Reasoning : 1(b), 2(c)

Non-Verbal Reasoning : 1(1), 2(c)

M. A MASS COMMUNICATION & JOURNALISM

Total Marks: 100

Time: 2 hours

Read the following passage and answer the questions given below, based on the text in the passage:

First it was the AXN that was yanked off the air, then it was the FTV's turn over the issue. It is now being hinted *plug might be pulled on CNBC Awaaz shortly. This scissor-happy moral policing by the government has goat of several top media watchers, who feel the I&B Ministry is going tad too far in throttling content on television...*

Find the meaning of words or phrases in the passage above, and choose the right one from among the choices closest to the textual meaning.

1. Yanked off

A. Complimented B. Confiscated C. Pulled out D. Punished

2. Scissor-happy

A. Smile shaped scissor B. Censor Board C. Warning D. Take pleasure in censoring

Find the meaning of words or phrases in the passage above, and choose the one from among the choices most opposite to the textual meaning:

3. Throttling

A. Free B. Liberal C. Strangulate D. Suffocate

Find the correct meaning of the Idioms and phrases

4. Taxes have been hiked across the board.

A. Tax rise will apply to all
B. Tax rise decision taken by a board
C. Tax rise will apply only to cross ownership
D. Board members have to pay additional taxes

The sequence of the statements is jumbled, except the first and the last. Find the correct order of the sequence from the options given below.

5. *The next century belongs to India;*

P) which allows free thinking; the second is demography;
Q) 55 percent of its population is below 30,
R) Thanks to its three Ds. India has democracy
S) young people are innovate; the third is diversity of culture.

This improves creativity.

A. RQPS B) RPQS C)RQPS D)RSPQ

Find the suitable answer from among the choices given to complete the following sentences and write answer in the box.

6. He _____ in Guwahati for the last 20 years.

- A. lives B. has been living C. is living D. had been living

Find out the error in each of the following sentence. Indicate in which part of the sentence (A,B,C, or D) the mistake occurs.

7. We are working (A)/ in the same office (B)/ so I can't avoid (C)/ to meet her. (D)

Find the suitable answer from among the choices.

8. Who wrote the book *Everybody Loves a Good Drought*

- A) Mark Tully B) Dileep Padgaonkar C) N. Ram D) P. Sainath

9. A popular digital entertainment gadget iPod is manufactured by

- A) Apple B) IBM C) Intel D) Sony

10. The film *A mighty Heart* starring Angelina Jolie and Brad Pitt is based on American journalist slain in Pakistan in 2002. His name is

- A) Daniel Pearl B) Robert Fisk C) Daniel Lak D) Andrew Whitehead

11. Nacro-analysis investigation is a method of

- A) Using galvanic skin response test B) Using lie detector test
C) Making subject semiconscious by injecting sodium pentothal
D) Using radiation to map the brain

12. Bluetooth is a technology in communication which features

- A. Wireless communication using radio waves
B. Wireless communication using infra red rays
C. Wireless communication using micro waves
D. Wireless communication using laser

13. The Editor of Shillong Times

- A. Manas Choudhury B) B. G. Baruah C) Avik Sarkar D) P. Lyndogh

14. Though useless for flying, the wings of the ostrich help the bird

- A) Fighting B) standing C) sleeping D) running

15. The part of the Indian Constitution, "We the People of India, having solemnly resolved to constitute India into a

Sovereign, Socialist, Secular Democratic Republic and to secure to all its citizens: Justice..Liberty..Equality and

Fraternity" is found in

- A) Article 1 B) Directive Principles of State Policy C) Fundamental Rights D) Preamble

16. The largest state in Northeast India in terms of geography is

- A. Assam B) Nagaland C) Tripura D) Arunachal Pradesh

17. The VAT (Value Added Tax) has replaced

- A) Excise duty B) Sales Tax C) Income Tax D) Indirect Tax

18. Which state celebrates the Hornbill harvest festival in the North East?

- A) Manipur B) Mizoram C) Meghalaya D) Nagaland

19. *Life's Good* is the catchline of which of the following brands

- A) LG B) HP C) Samsung D) Kodak

20. Write an essay not exceeding 250 words based on the picture printed below



Woman mourns relative killed in tsunami, Cuddalore, India, Tamil Nadu, 28 December 2004

Write an essay on the topics given below in not more than 250 words

21. Violence in the society is becoming more and more crude and gory. Are media acting as 'fueler' or spoiler of violence? Discuss.

PG Diploma in Community Communication (Part-Time)

Total Marks: 50

Time: 1:30 hours

A. Find the suitable answer from among the choices

1. CBO means
 - a. Central Backward Organisation
 - b. Community Based Organisation
 - c. Community for Border Orphanage
 - d. Central Botanical Organisation
2. Name of the Union Minister for Rural Development
 - a. Manishankar Aiyar
 - b. Ram Vilas Paswan
 - c. Raghuvansh Prasad
 - d. Lalu Prasad Yadav

B. Answer any two not exceeding 300 words on the topics given below :

1. Women Empowerment
2. Status of Self Help Groups in Assam
3. Rural Employment Scheme

M A in English

Maximum marks: 100

Time allowed: 2 hours

There are 6 questions in all. Ensure that you answer all questions. Please answer all questions in the space provided.

1. Rewrite the following sentences using the verbs in the brackets in their correct tense forms : 2x5=10

- (a) When we went to him, he (teach) his students.
- (b) He (come) here every Monday.
- (c) I (work) on this project for the last two years.
- (d) He had (think) of a good answer to the question.
- (e) The village (change) but it is still undisturbed.

2. Make sentences to illustrate the use of the following:

2x5=10

- (a) at arm's length
- (b) blue blood
- (c) call up

- (d) by dint of
- (e) lion's share

3. Develop the following points to write a coherent short essay (length: 400 words). 20

Terrorism and Our Lives

Points: Introduction – how terrorism has become a part of our lives – examples of recent terrorist attacks – a possible definition of what constitutes terrorism – causes of terrorism – negative effects of terrorism – terrorism and media – possible solution(s) to terrorism – conclusion

4. Write short notes on the following topics in *not more than 100 words each* : 10x3 =30
 (a) thrillers (b) books into films (c) women writers

5. Read the following poem carefully and answer the questions that follow.

Stop all the clocks

Stop all the clocks, cut off the telephone,
 Prevent the dog from barking with a juicy bone,
 Silence the pianos and with muffled drum
 Bring out the coffin, let the mourners come.

Let aeroplanes circle moaning overhead
 Scribbling on the sky the message He is Dead,
 Put crepe bows round the white necks of the public doves,
 Let the traffic policemen wear black cotton gloves.

He was my North, my South, my East and West,
 My working week and my Sunday rest,
 My noon, my midnight, my talk, my song;
 I thought that love would last for ever: I was wrong.

The stars are not wanted now: put out every one;
 Pack up the moon and dismantle the sun;
 Pour away the ocean and sweep up the wood;
 For nothing now can ever come to any good.

- (a) Write a few lines on the poem's theme. 5
- (b) Comment on the poetic devices used in the poem. 5
- (d) Compare (or contrast) this poem with other poems on similar themes that you have read. 5
- (e) Explain the meaning of "Put crepe bows round the white necks of the public doves, /Let the traffic policemen wear black cotton gloves". 5

6. Read the following passage and write a précis in not more than about 125 words. 10

Printing as it developed in East Asia did not make use of a printing press as in Gutenberg's case. Although the invention of movable type in China and Korea preceded Gutenberg's printing press, the impact of East Asian movable type printing presses was not as influential as it was in Western European society. This was likely due to the enormous amount of labour involved in manipulating the thousands of porcelain tablets, or in the case of Korea, metal tablets, required by the use of written Chinese characters. Nevertheless, hundreds of thousands of books, on subjects ranging from Confucian classics to science and mathematics, were printed using the older technology of woodblock printing, creating the world's first print culture.

In contrast, the impact of Gutenberg's printing press in Europe was comparable in its effects on society to the development of writing, the invention of the alphabet or the Internet. The printing press was also a factor in the establishment of a community of scientists who could easily communicate their discoveries through the establishment of widely disseminated scholarly journals, helping to bring on the scientific revolution. Because of the printing press, authorship became more meaningful and profitable. It was suddenly important who had said or written what, and what the precise formulation and time of composition was. This allowed the exact citing of references, producing the rule, "One

Author, one work (title), one piece of information". Before, the author was less important, since a copy of Aristotle made in Paris would not be exactly identical to one made in Bologna. For many works prior to the printing press, the name of the author was entirely lost.

Because the printing process ensured that the same information fell on the same pages, page numbering, tables of contents, and indices became common, though they previously had not been unknown. The process of reading was also changed, gradually changing over several centuries from oral readings to silent, private reading. The wider availability of printed materials also led to a drastic rise in the adult literacy rate throughout Europe.

Within fifty or sixty years of the invention of the printing press, the entire classical canon had been reprinted and widely promulgated throughout Europe. Now that more people had access to knowledge both new and old, more people could discuss these works. Furthermore, now that book production was a more commercial enterprise, the first copyright laws were passed to protect what we now would call intellectual property rights. A second outgrowth of this popularization of knowledge was the decline of Latin as the language of most published works, to be replaced by the vernacular language of each area, increasing the variety of published works. Paradoxically, the printing word also helped to unify and standardize the spelling and syntax of these vernaculars, in effect "decreasing" their variability. This rise in importance of national languages as opposed to pan-European Latin is cited as one of the causes of the rise of nationalism in Europe.

M. Tech. in Energy Technology

Maximum marks: 100

Time: 2 hours

Section A: General Aptitude in Energy (50 marks)

This section contains 50 (Fifty) multiple-choice questions.

Choose the correct answer and write the alphabet of appropriate choice in the box provided in the right margin

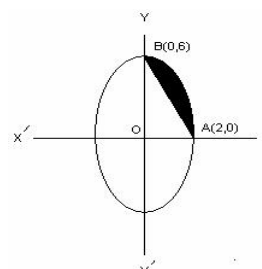
- Which of the following fuels is renewable
(a) Coal (b) Natural gas (c) Petrol (d) Biogas ☐
- Briquetting is a technique of
(a) Densification of loose biomass (b) Anaerobic digestion of biomass
(c) Fermentation of biomass (d) Hydrogen production from biomass ☐
- Which of the following instrument is used for measuring wind velocity?
(a) Anemometer (b) Fyrite
(c) Ammeter (d) Lux meter. ☐
- Which of the following is the most commonly used element in solar cell which is also then second most abundant element in the earth's crust?
(a) Tungsten (b) Silicon (c) Aluminum (d) Carbon ☐
- Kyoto Protocol is related to
(a) Piece & International Boarder dispute (b) International Boarder dispute only
(c) Global warming mitigation strategy (d) Fuel crisis ☐

Section B: Mathematics (20 marks)

This section contains 4 (Four) questions containing equal marks.

Use space provided along with the question to answer.

- Find dy/dx of $y^x = x^y$
- A line makes \hat{a} , \hat{a} , \hat{a} and \hat{a} with the diagonals of a cube, prove that $\cos^2 \hat{a} + \cos^2 \hat{a} + \cos^2 \hat{a} + \cos^2 \hat{a} = 4/3$
- In the given figure, AOBA is the part of the ellipse $9x^2 + y^2 = 36$ in the first quadrant such that OA = 2 and OB = 6. Find the area between the arc AB and the chord AB



Section C: Physics (15 marks)

This section contains 3 (*Three*) questions containing equal marks.

Use space provided along with the question to answer.

1. 'A' is a cosmonaut on the International Space Station, moves in a circular orbit around Earth, at an altitude of 520 km and with a constant speed v of 7.6 km/s. Mass m of 'A' is 79 kg. What is his acceleration? (Given Earth Radius, $R_E = 6.37 \times 10^6$ m).
2. You are given a length of uniform heating wire made of a nicke- chromium-iron alloy called Nichrome. It has a resistance R of 72 Ω . At what rate is energy dissipated if a potential difference of 120V is applied across the full length of the wire.
3. A gas cylinder containing gas can withstand a pressure of 14.9 atmosphere. The pressure gauge of the cylinder indicates 12 atm at 27°C. Due to sudden fire in the building, temperature of the cylinder starts rising. At what temperature, the cylinder will explode?

Section D: Chemistry (15 marks)

This section contains 3 (*Three*) questions containing equal marks.

Use space provided along with the question to answer.

1. How many moles of HNO_2 are required to prepare 1.0 L solution of pH 3.0? (Given K_a for $\text{HNO}_2 = 4.5 \times 10^{-4}$).
2. A piece of wood buried by a glacier had 25.6% as much C^{14} as a recently grown piece of wood. If the amount of C^{14} in the atmosphere was the same when the old died as it is now, when was the wood buried (Given $t_{1/2}$ for $\text{C}^{14} = 5600$ year).
3. Calculate the change in entropy due to heating of 2 moles of an ideal gas from a volume of 100 L at 50°C to a volume of 150 L at 150°C. (Take $C_v = 7.88 \text{ Cal K}^{-1} \text{ mol}^{-1}$)

M. A. IN CULTURAL STUDIES

Maximum Marks : 100

Time : 2 hours

The Written Test consists of the following :

- (i) General information on North East India particularly of Assam.
- (ii) Elementary knowledge about the artistic heritage of India with particular emphasis on North East India.
- (iii) An essay to be written, on a topic of contemporary and general interest.

Moreover, short answer / objective type questions will be set mostly on General Knowledge relating to Art, History, Culture, Literature, Language, Contemporary events etc.

1. Locate the following spots shown in the map of India supplied herewith :

(a) Mysore (b) Varanasi

2. Label the names of three SAARC countries in the map supplied.

3. Write an essay on

(i) 17th FIFA World Cup or (ii) The Computer.

4. Deabbreviate - ISRO, ASEAN.

5. Name the authors of - War and Peace, Mrityunjay.

6. Choose the correct answer :
 (a) Patua menas - scroll painter / glodmith / carpenter.
 (b) Ramcharitnamas was composed by - Madhabdev / Tulsidas / Chaitanyadev.

7. Answer :
 (a) Name one philosopher-scientist of ancient India.
 (b) Name the only Indian recipient of a prize for peace.

8. Choose the right match :
- | | |
|---------|-----------|
| Manipur | Onam |
| Tamil | Laiharaba |
| Kerala | Kuchipudi |
| Andhra | Pongal |

M. Sc. IN MOLECULAR BIOLOGY AND BIOTECHNOLOGY

Part- A carries 80 marks objective type questions and Part B carries 20 marks descriptive type questions.
 There is negative marking in Part-A

Part A (80 marks)

Instruction: Out of the four options, only one is correct and choose the correct answer. Two (2) marks will be awarded for each correct answer and one (1) mark will be deducted for each wrong answer

- Q.1. Tick the right answer
 (a) 2,4-dichlorophenoxyacetic acid (2,4-D) at higher concentration is useful for the plant growth.
 (b) 2,4-D at higher concentration will inhibit root activity.
 (c) 2,4-D at higher concentration will kill the vegetative part of the plants.
 (d) All above statements are true.
- Q2. Which of the following is responsible for the synthesis of insulin
 (a) α -cells of the islets of langerhans (b) β -cells of the islets of Langerhans
 (c) δ -cells of the islets of Langerhans (d) None of these
- Q3. Which of the following is not an example of disaccharide-
 (a) lactose (b) maltose (c) inulin (d) sucrose
- Q4. Which of the following disease in man is related with prion
 (a) Kuru (b) Thallasemia (c) Pox (d) Malaria
- Q5. In which region of mitochondria are enzymes of citric acid cycle located?
 (a) Outer membrane (b) Inner membrane
 (c) Intermembrane space (d) matrix
- Q6. The half life of ^{215}At is 100 microseconds (μs). The time taken for the radioactivity of a sample of ^{215}At to decay to $1/16$ th of its initial amount is
 (a) 400 μs (b) 6.3 μs (c) 40 μs (d) 300 μs
- Q7. A die is tossed thrice. Getting an even number is considered as success. What is the variance of the binomial distribution.
 (a) $1/4$ (b) $2/4$ (c) $3/4$ (d) 1
- Q8. The equation of the curve whose slope is given by $dy/dx=2y/x$: $x>0$, $y>0$ and which passes through the point (1,1) is given by
 (a) $X^2 = y$ (b) $Y^2 = x$ (c) $X^2 = 2y$ (d) None of the above

- Q9. Which of the following has the highest pH
 (a) 0.01 M KCl (b) 0.01 M NH_4Cl (c) 0.01 M CH_3COOK (d) 0.01 M $\text{CH}_3\text{COO NH}_4$
- Q10. In context of AIDS indicate which of the following statements are true
 (a) Patients with advanced stage of AIDS have detectable levels of antibody to HIV
 (b) Polymerase chain reaction is a sensitive test used to detect antibodies to HIV
 (c) The decrease in CD 4^+ T cell number is the hallmark of AIDS.
 (d) All the above.
- Q11. In an outbred population, an individual is
 (a) more likely to be histocompatible with one of its parents than its siblings
 (b) there is one in four chance will have the same maternal and paternal haplotypes as one of its siblings
 (c) Unlikely to be histocompatible with its parents or siblings
 (d) None of the above
- Q12. The characteristic feature of eubacterial cell membrane is
 (a) Presence of Braun's proteins (b) Presence of lipotechoic acids
 (c) Absence of sterols (d) All the above
- Q13. In context of genomes of organisms, the following statements are true
 (a) There is no good correlation between genome size and genetic complexity
 (b) There are wide variations in the genome sizes of organisms within many phyla
 (c) Most of the genes that are unique to vertebrates are concerned with the immune or nervous system
 (d) All the above
- Q14. The following group of antibiotics exert their antibacterial effect by inhibiting protein synthesis
 (a) Penicillin and Ampicillin (b) Penicillin and Sulfonamides
 (c) Streptomycin and Gentamycin (d) Streptomycin and Penicillin
- Q15. In humans, which of the following is not primarily a function of blood plasma
 (a) Transport of hormones (b) Transport of chylomicrons
 (c) Transport of oxygen (d) Transport of antibodies
- Q16. Regulation of Lac operon is an example of
 (a) Transcriptional level regulation of gene expression
 (b) A positive control of the transcriptional level regulation of gene expression
 (c) A negative control of transcriptional level regulation of gene expression
 (d) None of the above
- Q17. Proteins that are to be glycosylated and transported from the cell as secretory proteins are processed in
 (a) Lysosomes (b) Golgi apparatus
 (c) Endoplasmic reticulum (d) ribosomes
- Q18. Northern blotting is used to detect a particular
 (a) DNA in a mixture of DNAs (b) RNA in a mixture of RNAs
 (c) Polypeptide in a mixture of polypeptides (d) None of the above
- Q19. The glyoxylate pathway depends on the following two enzymes
 (a) Isocitrate dehydrogenase and isocitrate lyase
 (b) α -ketoglutarate dehydrogenase and malate synthase
 (c) Isocitrate lyase and malate synthase
 (d) Isocitrate dehydrogenase and α -ketoglutarate dehydrogenase
- Q20. Ultraviolet radiations damage DNA by causing
 (a) Thymine-Thymine and Thymine-Cytosine dimer formation
 (b) Causing double strand breaks in DNA
 (c) Causing Adenine-Adenine dimer formation
 (d) By oxidation of bases like guanine to give oxoG
- Q21. In anaerobic respiration, there is net gain of
 (a) 38 ATP (b) 50ATP (c) 4ATP (d) None of these
- Q22. The following organism is a photoheterotroph
 (a) cyanobacteria (b) purple bacteria (c) sulfur bacteria (d) all of these
- Q23. (A) Glycosidic linkage present between adjacent glucose units of cellulose is generally
 (a) β 1 \rightarrow 4 (b) α 1 \rightarrow 4 (c) α 2 \rightarrow 1 (d) β 2 \rightarrow 1
- Q24. DNA differs from RNA in
 (a) nature of sugar alone (b) nature of purines alone

- (c) nature of sugar and pyrimidines (d) all the above
- Q25. In anaerobic respiration, there is net gain of
 (a) 38 ATP (b) 50 ATP (c) 4 ATP (d) None of these
- Q26. The following organism is a photoheterotroph
 (a) cyanobacteria (b) purple bacteria
 (c) sulfur bacteria (d) all of these
- Q27. (A) Glycosidic linkage present between adjacent glucose units of cellulose is generally
 (a) β 1 \rightarrow 4 (b) α 1 \rightarrow 4 (c) α 2 \rightarrow 1 (d) β 2 \rightarrow 1
- Q28. DNA differs from RNA in
 (a) nature of sugar alone (b) nature of purines alone
 (c) nature of sugar and pyrimidines (d) all the above
- Q29. Adenosine is a
 (a) Purine base (b) Pyrimidine base (c) Nucleotide (d) Nucleoside
- Q30. Which of the following is not a greenhouse gas
 (a) CO (b) NH₃ (c) O₃ (d) CH₄

Part B (20 marks)

- Q1. Fill up the blanks
 Hyperthermophilic bacteria can survive at temperature above _____
 and psychrophilic bacteria below _____ degree centigrades.
- Q2. Calculate the molality (m) of a solution of 72.0 g glucose (C₆H₁₂O₆) in 1 liter of water (2)
- Q3. Find out the missing number 15 51 156 _____ 1425. (1)
- Q4. Write the structure of the followings (2 x 4 = 8)
 (a) Glucose (b) Adenine
 (c) Lysine (d) Cholesterol
- Q5. Why does butter turn rancid if left unrefrigerated for some time? (2)
- Q6. RNA is readily hydrolyzed by alkali but DNA is not. Why? (2)
- Q7. Why is edible salt iodized? (2)
- Q8. Illustrate the structure of a DNA molecule (2)

M. Tech in Electronics Design & Technology

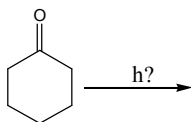
There will be negative marking. For every wrong answer 1/4th of the marks will be deducted.

1. Which of the following meters has the highest accuracy ?
(a) moving iron meter (b) moving coil meter
(c) rectifier type meter (d) thermocouple meter
2. The internal resistance of an ammeter should be very low in order to have $s^2 + 4s + 16 = 0$
(a) high accuracy (b) high sensitivity
(c) maximum voltage drop across the meter (d) minimum effect on the current in the circuit
3. The characteristic equation of a closed loop control system is given as
The resonant frequency in radians/sec of the system is
(a) 2 b) $2\sqrt{3}$ (c) 4 (d) $2\sqrt{2}$
4. For the root locus plot of the system having the loop transfer function given by $G(s)H(s) = \frac{K}{s(s+4)(s^2+4s+5)}$
(a) no breakaway point (b) three real breakaway point
(c) only one breakaway point (d) one real and two complex breakaway points
5. A Class-A transformer coupled, transistor power amplifier is required to deliver a power output of 10 W. The maximum power rating of the transistor should not be less than
(a) 5 W (b) 10 W (c) 20 W (d) 40 W
6. The early effect in a bipolar junction transistor is caused by
(a) fast turn on (b) fast turn off
(c) large collector base reverse bias (d) large emitter base forward bias
7. In an 8085 microprocessor system with memory mapped I/O
(a) I/O devices have 16 – bit address
(b) I/O devices are accessed using IN and OUT instruction
(c) there can be a maximum of 256 input and 256 output devices
(d) arithmetic and logic operations can be directly performed with the I/O data.
8. The minimum number of NAND gates required to implement the Boolean function is equal to
(a) 3 (b) 1 (c) 4 (d) 7
9. An amplitude modulated voltage has modulation index of 100%. If the carrier is suppressed, the percentage power saving is
(a) 50 % (b) 66.6% (c) 75 % (d) 25 %
10. The drawback of FM relative to AM is that
(a) noise is very high for high modulation frequencies
(b) larger bandwidth is required
(c) higher modulating power is required
(d) higher output power is required.

M. Sc. in APPLIED CHEMISTRY

1. Arrange the following elements in the increasing order of electronegativity:
N, Be, F, Li

2. Write the product(s) of the following reaction:

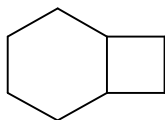


3. In a NaCl crystal, a Na^+ ion is surrounded by
(a) 1 Cl^- (b) 2 Cl^- (c) 4 Cl^- (d) 6 Cl^-

4. The complex $[\text{Ni}(\text{CN})_4]^{2-}$ is diamagnetic but $[\text{NiCl}_4]^{2-}$ is paramagnetic with two unpaired electrons. Explain this observation using simple crystal field theory.

5. 1.8% solution of glucose is isotonic with 0.6% solution of an organic substance. What is the molecular weight?
(a) 30 (b) 60 (c) 90 (d) 120

6. The correct name of the following hydrocarbon is:



- (a) Cyclo-octane (b) Bicyclo-octane
(c) Bicyclo-4.2.0-octane (d) Bicyclo-2,2,2-octane

7. The wave function of an electron in the lowest state of the hydrogen atom is given by

$$\Psi(r) = \frac{1}{\sqrt{\pi a_0^3}} \exp(-r/a_0)$$

Where $a_0 = 0.53 \text{ \AA}$. What is the probability of finding the electron inside a small sphere of volume $d\tau = 10^{-6} \text{ \AA}^3$ centred at a point 0.5 \AA from the nucleus.

M.Sc. in PHYSICS

Syllabus: B.Sc. Physics (Honours) syllabus of any Indian University

Entrance test has two parts, Part A and Part B of 50 marks each and is of a total duration of 2 hours.

Part A consists of 50 objective type questions of one mark each and is of one-hour duration.

Part B consists of short descriptive type questions to examine the conceptual clarity and reasoning ability of the candidate. The candidate is required to attempt any 5 questions of 10 marks each out of about 10 given questions.

Typical questions for Part A and Part B are given below:

PART - A

1. If the other parameters are same, the range of a projectile is maximum when its angle of projection is
a) 90° b) 60° c) 45° d) 30°
2. Hamiltonian formalism is easier to handle than Lagrangian formalism because Hamiltonian formalism involves
a) first order differential equations
b) generalized momentum instead of generalized co-ordinates
c) only cartesian co-ordinates
d) no time derivatives
3. An electric potential field is produced by joint charges $1 \mu\text{C}$ and $4 \mu\text{C}$ located at $(-2, 1, 5)$ and $(1, 3, -1)$ respectively. The energy stored in the field is
a) 2.57 mJ b) 5.14 mJ c) 0.28 mJ d) 20.56 mJ
4. Which of the following potentials does not satisfy the Laplace's equation ?
a) $V = 2x + 5$ b) $V = 10xy$
c) $V = 2x^2y + 5x + 2$ d) $V = 3y + 10$
5. The expression which explains the nonexistence of magnetic monopoles is
a) $\nabla \times \mathbf{E} = -\partial \mathbf{B} / \partial t$ b) $\nabla \cdot \mathbf{B} = 0$
c) $\nabla \times \mathbf{B} = \mu_0 \mathbf{J}$ d) $\nabla \cdot \mathbf{J} + \partial \rho / \partial t = 0$

PART - B

1. Starting from the Lagrangian equation, prove that the equation of motion a simple pendulum is
$$\ddot{\theta} + \frac{g}{l} \sin \theta = 0$$
where θ , g and l are angular displacement, acceleration due to gravity and length of the string respectively.
2. Find the energy release, if two ${}_1\text{H}^2$ nuclei can fuse together to form ${}_2\text{He}^4$ nucleus where the binding energies per nucleon of ${}_1\text{H}^2$ and ${}_2\text{He}^4$ are 1.1 MeV and 7.0 MeV respectively.
3. The electrostatic potential due to a certain charge distribution is given by the expression :
 $V(x, y, z) = -(x^2yz + xy^2z + xyz^2)$ volts
Calculate the electric field and charge density and point $(2, 1, 3)$
4. A half wave rectifier uses load resistor $R_L = 8\text{k}\Omega$ and shunt filter capacitor of $12\mu\text{F}$. The sinusoidal input voltage is $20\sin 2\pi 50t$. The angle of conduction is 40° . Assuming the rectifier to be ideal ($R_f = 0$, $R_p = \infty$) calculate :
a) dc load current I_{dc}
b) dc output voltage V_{dc}
c) ripple voltage V_R
d) ripple factor γ ($\cos 40^\circ = 0.7660$)

M.A./M.Sc. in MATHEMATICS

- The entrance test question paper will consist of two sections: **Section A** of **60 marks** and **Section B** of **40 marks**
- The duration of the test will be of **2 hours**.
- **Section A** will consist of 30 multiple-choice questions (all compulsory) of 2 marks each. In this section, 1 mark will be deducted for each wrong answer.
- **Section B** will consist of about 10/12 descriptive type questions of 5 marks each. Any 8 (eight) questions are to be answered from this section in the space provided in the question paper.

Model questions for Section A and Section B are given below

SECTION A

Choose the correct alternative

1. $\lim_{x \rightarrow 0} \left(\frac{\tan x}{x} \right)^{1/x^2}$ is equal to
a. 0 (b) 1 (c) $e^{1/3}$ (d) e .
2. The series $\frac{n!2^n}{n^n}$ is
(a) convergent (b) divergent (c) conditionally convergent (d) none of these.
3. $\left(\frac{1+i}{\sqrt{2}} \right)^{100} + \left(\frac{1-i}{\sqrt{2}} \right)^{100}$ is equal to
(a) 0 (b) 1 (c) 2 (d) -2.
4. If the cube roots of unity are $1, \omega, \omega^2$, then the roots of the equation $(x-1)^3 + 8 = 0$ are
a) $-1, 1+2\omega, 1+2\omega^2$ b) $-1, 1-2\omega, 1-2\omega^2$
c) $-2, -2\omega, -2\omega^2$ d) $-1, -1-2\omega, -1-2\omega^2$
5. $\int_0^\pi xF(\sin x)dx$ is equal to
(a) $\frac{\pi}{2} \int_0^\pi F(\sin x)dx$ (b) $\pi \int_0^\pi F(\sin x)dx$ (c) $\pi \int_0^{\pi/2} F(\sin x)dx$ (d) $\frac{\pi}{4} \int_0^\pi F(\sin x)dx$
6. The system of equations
$$\begin{aligned}x - y + 3z &= 0 \\x + z &= 0 \\x - y - z &= 0\end{aligned}$$
has
(a) a unique solution; (b) finitely many solutions;
(c) infinitely many solutions; (d) no solution.
7. If $u = \sin^{-1} \left(\frac{x^{1/3} + y^{1/3}}{x^{1/2} + y^{1/2}} \right)^{1/2}$, then $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y}$ is
(a) $\frac{1}{12} \tan u$ (b) $-\frac{1}{12} \tan u$ (c) $\frac{12}{\tan u}$ (d) $-\frac{12}{\tan u}$

8. The rank of the matrix

$$\begin{pmatrix} 6 & 1 & 0 & 3 \\ 2 & 3 & 0 & 2 \\ 4 & -1 & 2 & -3 \end{pmatrix}$$

is

- (a) 4 (b) 3 (c) 2 (d) 1.

9. If $\vec{P} = \hat{i}x + \hat{j}y + \hat{k}z$ and \vec{A} is a constant vector, then $\nabla(\vec{P} \cdot \vec{A})$ is equal to

- (a) \vec{A} (b) \vec{P} (c) $\vec{P} \cdot \vec{A}$ (d) $\vec{P} \times \vec{A}$.

10. The probability of getting two heads by tossing 3 coins simultaneously is

- (a) $\frac{1}{4}$ (b) $\frac{1}{8}$ (c) $\frac{3}{8}$ (d) $\frac{1}{2}$.

11. The solution of the differential equation $x \frac{dy}{dx} + y = 0$ subject to the boundary condition $y(1) = 1$ is

- (a) $y = x$ (b) $y = x^2$ (c) $y = \frac{1}{x}$ (d) $y = \frac{1}{x^2}$.

12. If both a and a^2 are generators of a finite group then the order of the group is

- (a) even (b) odd (c) zero (d) any positive integer.

SECTION B

1. Let G be a group of order pq , where p and q are primes. Show that every proper subgroup of G is cyclic.

2. Show that there is no real number k for which the equation $x^3 - 3x + k = 0$ has two distinct roots in $[0, 1]$.

3. Determine the dimension and a basis of the subspace $\{(a, b, c, d) : ab - 2c + d = 0\}$ of R^4 .

4. Solve the following system of linear equations:

$$x + y + z = 3$$

$$x + 2y + 2z = 6$$

$$x + ay + 3z = 8.$$

5. If the eigen values of a 3×3 matrix A are 1, 2, and 3, then find the value of $(\det A)^2 - \det A$.

6. Find the general solution of the following differential equation:

$$\frac{d^2 y}{dx^2} - 6 \frac{dy}{dx} + 9y = x^2 e^{3x}.$$

Master of Computer Application (MCA)

Full Marks : 100

Time : 2 hours

Candidates needs to score minimum qualifying marks in each section.

The entrance examination question paper will contain three sections :

1. Section I (Logical Reasoning) : 40 marks
2. Section II (Mathematics or Computer Basics) : 30 marks
3. Section III (English Composition & Comprehension) : 30 marks

To qualify for selection a candidate must secure at least 20% marks in each of the sections

Section I

**Each correct answer will fetch 2 marks and
for every wrong answer 1 (one) mark will be deducted.**

1. What is the next number in the series – 121, 169, 289, 361, 526, _ ?
(A) 841 (B) 625 (C) 784 (D) 729 (E) none of these
2. The missing letters in the sequence - “ _ a b b b _ b _ b a b b ” are –
(A) a, b, b (B) a, a, b (C) b, a, a (D) b, a, b (E) b, b, a
3. TMXK : ULXJ :: WQFY : ?
(A) VRGX (B) XPGZ (C) XRGX (D) XPGX (E) none of these
4. A cube with all sides painted is divided into small cubes of equal sizes. The edge of a small cube is exactly one-fourth as that of the original cube. Therefore the number of small cubes with only one side painted is –
(A) 4 (B) 6 (C) 12 (D) 24 (E) 36
5. Himanshu is older than Chittaranjan. Vikas is older than Shridhar. Manik is not as old as Vikas but is older than Chittaranjan. Shridhar is not as old as Chittaranjan. Who is the youngest?
(A) Himanshu (B) Chittaranjan (C) Shridhar (D) Manik

Questions 6 to 8 are based on the following –

A professor is asked to judge a film contest. There are six films –

X, Y, Z, R, T-Part I and T-Part II. The films will be shown over a six-day period, from Monday to Saturday.

- (1) **No film is shown more than five times.**
- (2) **Film X is shown every day except Friday and Saturday.**
- (3) Film R is shown on either Monday or Friday.
- (4) Both parts of film T are shown every day except for Monday
- (5) when only Part I is shown and Saturday when only Part II is shown.
- (6) Film Z is shown on alternate days beginning on Monday.
- (7) Film Y is shown on three days in succession between Monday and Friday.
- (8) Only one film is shown at a time.
- (9) The two parts of film T must be viewed in order and on separate days, though not necessarily on consecutive days.
- (10) Film Y and R are both shown on a day on which film X is not shown.
- (11) The professor cannot view any film on Thursday.

6. What is the minimum number of films shown on one day ?
(A) none (B) 1 (C) 2 (D) 4 (E) 5
7. What is the maximum number of films which can be viewed on one day ?

8. What is the maximum number of times the professor may view both parts of the film T ?
(A) 2 (B) 4 (C) 8 (D) 10 (E) 14

In this Section answer questions in either Group A or Group B

Each correct answer will fetch 2½ marks and for every wrong answer 1 (one) mark will be deducted.

2. The square root of $49 + 20\sqrt{6}$ is
(A) $2 \pm \sqrt{3}$ (B) $7 \pm \sqrt{3}$ (C) $\pm(5 + 2\sqrt{6})$ (D) $\pm(7 - 2\sqrt{6})$ (E) none of these
3. The term independent of x in the expansion of $(x^2 - 1/x)^4$ is
(A) 1 (B) -1 (C) 48 (D) 0 (E) none of these
4. If $1/(b-a) + 1/(b-c) = 1/a + 1/c$ then a, b, c are in
(A) AP (B) HP (C) GP (D) HP and GP both (E) none of these
5. If $f(x) = \sin[x] / [x]$ for $[x] \neq 0$
 $= 0$ for $[x] = 0$
($[x]$ is the largest integer less than or equal to x)
then $\lim_{x \rightarrow 0} f(x)$ equals –
(A) 1 (B) 0 (C) -1 (D) 0.81 (E) none of these
6. If the complex numbers Z_1, Z_2, Z_3 represent the vertices of an equilateral triangle so
 $|Z_1| = |Z_2| = |Z_3| = 3$ then $|Z_1 + Z_2 + Z_3|$ is equal to –
(A) $\sqrt{3}$ (B) 0 (C) 9 (D) 3 (E) none of these
7. The number of solutions of the equation $\sin^4 \theta - 2 \sin^2 \theta - 1 = 0$ at $(-\pi, \pi)$ is –
(A) 4 (B) 2 (C) 0 (D) 2 (E) none of these

Each correct answer will fetch 2 marks and for every wrong answer 1 (one) mark will be deducted.

- Assuming normal rules of precedence, the equivalent postfix form of the arithmetic expression $a + b * c / d - e * f$ is
(A) $a + ((b * c) / d) - (e * f)$ (B) $a b c * d / + e f * -$
(C) $- + a / * b c d * e f$ (D) $a b c d e f + * / - *$
- The 8-bit 2's complement binary representation of -35 is
(A) - 00100011 (B) 11100011
(C) 110111101 (D) 10110001
- An EPROM with 16-bit address bus and 4-bit data bus contains –
(A) 32 KB (B) 64 KB (C) 256 KB (D) 128 KB

4. Each surface of a disk in hard-disk pack containing 10 double-sided disks has 20 tracks and each track has eight sectors. The number of cylinders in the hard disk is -

- (A) 160 (B) 3200 (C) 20 (D) 8

5. The output of the following C program is –

```
main ()
{
    int    i = 10 ;
    for ( i = 1 ; i <= 18 ; i ++ )
        printf (" % d", (i % 3 ? i : ++i ));
}
```

- (A) -1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
(B) 10111314161719
(C) 11 12 13 14 15 16 17 18
(D) 101113141617

6. If four processes with individual processing time requirements of 10, 8, 12, 14 respectively, are scheduled in the sequence without being descheduled, then the average turn around time will be –

- (A) 25.5 (B) 11 (C) 92 (D) 14.5

7. The output of the following C program is –

```
int f ( int x)
{
    char    i
    for ( i = 0 ; x ; x >=> 1 )
        if ( x & 1)
            i ++;
    return ( (int) i );
}
```

- (A) tests if x is very much larger than 1. (B) calculates the square of x.
(C) calculates the number of bits in x. (D) calculates the number of '1' bits in x.

Section III

- | | |
|---|----------|
| 1. Write a precis in about 50 words for a given passage. | 10 marks |
| 2. Comprehension: Read the given passage and answer the set of questions based on it. | 10 marks |
| 3. Vocabulary test.. | 10 marks |

M. Sc. In Environmental Science

The test paper shall have both objectives as well as of short descriptive type questions covering (a) 10 + 2 level science subjects (Biology, Chemistry, and Physics) and (b) Basic concepts of environmental science, environmental pollution, current environmental issues, agro-ecosystems, agro-ecology, agriculture including hill agriculture, weather and climate system.

(No negative marking for wrong answer)

Marks: 100

Time: 2 hours

1. I. Fill up the gaps –

- (a) Bowman's capsule is the organ found in human -----
- (b) Shade tolerance plants are known as
- (c) Bacteria and fungi which live on dead organic matter are called.....
- (d) The causal organism of sheath blight of rice is
- (e) The enzyme for converting glucose to glucose 6-phosphate in glycolysis is

2. Write short notes on—

- (a) Centromere (b) nucleoid (c) hydrogen bonding (d) periodic properties of elements

3. Choose the correct answer:

- (a) Root cap is absent in—
 - (i) hydrophytes (ii) lithophytes (iii) xerophytes (iv) mesophytes
- (b) Bacteria differ from viruses in –
 - (i) Pathogenic nature (ii) genetic material
 - (iii) having well defined cytoplasm (iv) lacking proper nucleus
- (c) Identify the vector quantity
 - (i) time (ii) work (iii) heat (iv) electric field
- (d) *Itai itai* disease is caused due to –
 - (i) As poisoning (ii) As deficiency (iii) Cd deficiency (iv) Cd poisoning
- (e) Which of the following has net dipole moment –
 - (i) CCl_2 (ii) C_2H_2 (iii) H_2O (iv) CO_2
- (f) The standard value of atmospheric pressure
 - (i) 1013.25 mb (ii) 1013.30 mb (iii) 1013.40 mb (iv) 1013.45 mb
- (g) Loess is an outcome of –
 - (i) Aeolian erosion landform
 - (ii) Aeolian deposition landform
 - (iii) fluvial deposition landform
 - (iv) fluvial erosion landform
- (h) Which of the following is the correct sequence in terms of abundance in the atmosphere
 - (i) N_2 , O_2 , H_2 , Ar (ii) N_2 , H_2 , O_2 , Ar (iii) O_2 , N_2 , H_2 , Ar (iv) H_2 , O_2 , N_2 , Ar
- (i) which of the following is an example of sedimentary rock:
 - (i) granite (ii) Basalt (iii) Limestone (iv) Slate
- (j) Transition of inner electron in Heavy metals results in emission of
 - (i) X-ray Photons (ii) Visible light (iii) Infra red (iv) Microwave photons

4. Short answer type:

- (a) What is integrated pest management?
- (b) How will you distinguish between N and Mg deficiency symptoms in field?
- (c) Explain the heating process of earth's atmosphere.
- (d) H_2O molecule is V-shaped. Why?
- (e) Volume of water increases as it freezes. Why?
- (f) Calculate the pH of 1.0×10^{-8} M HCl.
- (g) How can we separate a mixture of solid organic compounds?
- (h) What is hydrological cycle?
- (i) What are seismic waves?

M.Tech. in BIOELECTRONICS

Full Marks 100

Time 2 Hrs

Answer either Part A or Part B

Write the answer in the block provided in CAPITAL letter

Instructions

There will be total 50 questions in each part. Each Question will carry equal marks. There will be negative marking. For every wrong answer $\frac{1}{4}$ th of the marks will be deducted.

1. Which of the following will serve as donor impurity in silicon
A) boron B) indium
C) germanium D) antimony ☐
2. Piezoelectric effect is generally observed in
A) insulators
B) insulators and semiconductors
C) conductors and superconductors
D) conductors and semiconductors ☐
3. Echocardiogram is a record of
A) Ultrasonic measurement in the heart
B) Heart's electrical activity measured on an electrocardiograph
C) Ultrasonic measurements in the brain
D) Neuronal activity of the brain measured on an electroencephalograph ☐
4. A resistor with negative temperature coefficient is called
A) potentiometer B) thermistor
C) semiconductor D) varactor ☐
5. A debouncing circuit is
A) an astable multivibrator B) a bistable multivibrator
C) a latch D) a monostable multivibrator ☐
6. If a mod-6 counter is constructed using 3 flip-flops, the counter will skip
A) 4 counts B) 3 counts
C) 2 counts D) none of the above ☐
7. The main advantage of using a three op-amp instrumentation amplifier over single op-amp differential amplifier lies in
A) Higher value of CMRR
B) Lower noise figure
C) elimination the need for accurate matching of resistors
D) simplicity of gain adjustment ☐
8. The Laplace transformation of the function $i(t)$ is $I(s) = \frac{10s + 4}{s(s + 1)(s^2 + 4s + 5)}$ Its final value will be
A) $\frac{4}{5}$ B) $\frac{5}{4}$
C) 4 D) 5 ☐
9. Which of the following pH values represents the greatest concentration of H^+ ions?
A) 4
B) 10
C) 2
D) 7 ☐
10. The base width in a junction transistor is deliberately chosen small
A) because the electric field is large

- B) because the concentration gradient of injected carriers is small
C) to reduce recombination of injected minority carriers
D) because the majority carriers easily reach the collector

☐

PART-B

1. Each unit of a nucleic acid consisting of a sugar, attached phosphate group, and base is a
A) nucleolus
B) nucleotide
C) nucleosome
D) histone
2. If one side of a DNA molecule contains the following sequence of nucleotides, AGTCCG, the complementary sequence on the other side would be:
A) GCCTGA
B) AGTCCG
C) TCAGGC
D) none of the above
3. All gases exchanged between air and blood in mammals occurs across the walls of the
A) trachea
B) bronchi
C) alveoli
D) bronchioles
4. The most common gas found in air is
A) oxygen
B) argon
C) nitrogen
D) carbon dioxide
5. Carbon dioxide is converted into carbonic acid in the cytoplasm of red blood cells by the enzyme
A) hemoglobin
B) carbonic anhydrase
C) oxyhemoglobin
D) carbon monoxide
6. One atmosphere of pressure equals
A) 1 mm Hg
B) 380 mm Hg
C) 600 mm Hg
D) 760 mm Hg
7. EEG provides recording of
A) Electrical signal B) Brain waves
C) Ear sensitivity D) None of the above
8. The efficiency of gills in fish is derived from
A) the countercurrent flow of water over the gills
B) the increasing temperature of blood within the gills
C) continuous diffusion of oxygen into the blood
D) a and b
9. Which of the pHs listed below represents the strongest base?
A) 7
B) 10
C) 13

☐☐☐☐☐☐☐☐☐

D) 15

10. Action potentials
A) are summable
B) are amplifiable
C) result from facilitated diffusion
D) are all-or-nothing events



ONE-YEAR certificate COURSE IN CHINESE (FULL TIME)

Full Marks : 100

Time : 2 hours

Part I - English Grammar

- (A) Change the Parts of Speech of the following words as directed in the parentheses: (5x1=5)
1. Strong (into Noun) 2. Suffice (into Adjective)
3. Practical (into Verb) 4. Extend (into Adverb) 5. Destroy (into Noun)
- (B) Give the opposite words for the following: (5X1=5)
1. Best 2. Able 3. Visible 4. Management 5. Technical
- (C) Change the following Affirmative sentences into Negative ones keeping the meanings intact: (5X1=5)
1. Only a kind man can act thus. 2. She is the best in her class.
3. Jack is sometimes foolish. 4. Everybody will agree to my opinion.
5. A poor man's life is hard.
- (D) Change the following Assertive sentences into Interrogative ones keeping the meanings intact: (5X1=5)
1. Everybody loves his country. 2. He was a fool to act thus.
3. No one can trust such a liar. 4. I will never forget those happy days in school.
5. It does not matter if he comes.
- (E) Choose suitable prepositions from the parentheses to fill up the blanks: (5x 1=5)
1. He is not able to cope _____ the situation. (with/in)
2. Jim is dull _____ Mathematics. (in/at)
3. Elizabeth is engaged _____ Mr. McDonald. (to/with)
4. Jack has brought disgrace _____ his whole family. (for/to)
5. Mr. Smith died _____ illness. (of/by)
- (F) Change the Gender of the following nouns: (5X1=5)
1. Duke 2. Widow 3. Hunter 4. Cow 5. Host
- (G) Change the following sentences with the correct form of the verbs given within the parentheses: (5x1=5)
1. Mr. Thomson and his family _____ London tonight. (leave)
2. They _____ John for several months. (see)
3. Ruby _____ here since 1991. (work)
4. Mr. Jones _____ the letter before his friend comes. (write)
5. Simon _____ to Scotland 30 years ago. (go)

(H) Write a letter (in not more than 200 words) - (15)

1. To your friend abroad describing an Indian festival you are fond of.

OR

2. To your father/mother explaining why you want to learn a foreign language.

OR

3. To the editor of a newspaper about the problems of blindly imitating the West.

(I) Write an essay (in not more than 300 words) on any one of the following: (20)

1. Environmental pollution

2. Globalization and India

3. National integration

4. The role of media in the Indian society

(J) Read the following text carefully and answer the questions given below: (10)

It is a matter of common knowledge that in underdeveloped countries such as India with a growing population, there is an unusual pressure on land cultivation. Here, more people are engaged in agriculture partly or wholly than are necessary.

What is the result? When more people are engaged in agriculture than are really needed for the purpose, they are really surplus. If they are withdrawn from the rural areas and put in other occupations and professions it will not mean any decrease in agricultural output. On the other hand, it might increase, as it is said, "Too many cooks spoil the broth". In absolute terms the total volume of rural unemployment is much larger than that of any other country. No wonder, it poses the most challenging problem for the planners to tackle.

1. Suggest a suitable title for the text. 2

2. In which literary category would you classify the text- 2

i. A report

ii. A story

iii. An advertisement

iv. An essay

3. Complete the following sentence with words or phrases that best suit the context. Choose from the alternatives suggested:

3x2=6

i. In India there are many more people engaged in land cultivation than are-

a) demanded

b) needed

c) expected

ii. "They are really surplus" means-

a) there are too many of them

b) they are really useless

c) they are really needed

iii. India has the largest number of-

a) unemployed persons in the urban areas

b) unemployed persons in the village areas

c) unemployed persons in the planning department

Part II - General knowledge on China

(K) Answer the questions (any ten): (10x2 =20)

1. What is the staple food of the Chinese people?

2. When was the People's Republic of China founded?

3. Name a famous Chinese poet.

4. Name a great philosopher of China.

5. Name the last dynasty of China.

6. Name one mountain range of China.

7. Name the sea to the east of China.

8. Name three neighbouring countries of China.

9. Name the national animal of China.

10. Which is the longest river of China?

11. Name the Indian Prime Minister who visited China in 1993.

12. Name the Chinese President who visited India in 1996.

M. Sc. IN NANO SCIENCE & TECHNOLOGY

Full Marks : 100

Time: 2 hrs.

Syllabus: B.Sc. Physics(Hons), Chemistry (Hons) and Biology (Hons) syllabus of any Indiaqn University

Entrance test has two parts, Part A and Part B of 50 marks each and is of a total duration of 2 hrs.

Part A consists of 50 objective type questions of one mark each. Duration for this part is one hour.

Part B consists of short descriptive type questions to examine the conceptual clarity and reasoning ability of the candidate. The candidate is required to attempt any five questions of 10 marks each out of about ten given questions.

Typical questions for Part A and Part B are given below:

PART – A

- Rutherford's model of the atom fails to explain
 - the neutral nature of atom
 - the presence of a positively charged nucleus
 - the heavy mass of the nucleus
 - the stability of the atom
- A field is irrotational if
 - grade $\vec{A} = 0$
 - div $\vec{A} = 0$
 - Curl $\vec{A} = 0$
 - None of these
- The relation between two current amplification factors of a transistor is
 - $\beta = \alpha/(1+\alpha)$
 - $\beta = (1-\alpha)/\alpha$
 - $\beta = \alpha/(1-\alpha)$
 - $\beta = (1+\alpha)/\alpha$
- Which of the following electronic configurations correspond to a noble gas
 - 2, 8, 4
 - 2, 8, 18, 8
 - 2, 8, 18, 7
 - 2, 8, 3

PART – B

- Show that a free particle cannot absorb a photon completely. (3)
 - Explain why is Compton effect experimentally not observed for visible light. (3)
 - An X-ray photon is found to have its wavelength doubled on being scattered through 90° . Find the wavelength and energy of the incident photon. (Compton wavelength of electron = 0.024 \AA). (4)
- Using a d.c and a.c voltmeter to measure the output signal from a filter circuit, we obtain readings of 25 Vd.c and $1.5 V_{\text{rms}}$. Calculate the ripple of the filter output voltage. (5)
 - A.d.c voltage supply provides 60 v when the output is unloaded. When connected to a load, the output drops to 56 v. Calculate the values of voltage regulation. (5)
- Calculate the change in entropy when 50 gm of water at 150°C is mixed with 80 gm of water at 40°C . (Specific heat of water $1 \text{ cal/gm/}^\circ\text{K}$) (5)
 - Calculate the change in the boiling point of water when the pressure is increased from 1.0 to 1.2 atmospheres. Given: Specific volume of steam $1677 \text{ cm}^3/\text{gm}$, latent heat of steam = 540 cal/gm , boiling point of water at one atmospheric pressure = 373°K , 1 atmospheric pressure = $1.0 \times 10^5 \text{ N/m}^2$. (5)
- The average velocity of an ideal gas molecule at 27°C is 0.3 m/s . Calculate the average velocity at 927°C .

- a) The threshold frequency for a surface is known to be 5×10^{14} Hz. What is the wavelength of light required to eject a photo electron having a kinetic energy of 5 eV? (5)
5. a) What are the basic differences between prokaryotes and eukaryotes ?
 b) What are the two principal chemical components of chromosomes ? Explain how one of these chemical component, act as carriers of genetic information. (5)

M.TECH IN COMPUTATIONAL SEISMOLOGY

Full Marks: 100

Time: 2 hours

- The question paper shall consist of two sections: **Section A** and **Section B**.
- **Section A** shall consist of 25 multiple choice questions (all compulsory) of 2 marks each.
Section B shall consist of 25 descriptive type questions
 Both sections cover the topics from

1. MATHEMATICS 2. STATISTICS 3. Physics 4. Earth Sciences 5. Engineering

In **Section B**, there will be 5 questions from each subsection (1 to 5). In this section candidates can attempt a maximum of 3 subsections and answer any 10 questions of 5 marks each from these 3 subsections only.

There will be no negative marks but partial credit will be given for questions in section B. Answers to the questions should appear in the space provided and nowhere else.

Model questions for Section A and Section B are given below

Section A

(Choose the correct answer using ✓ mark)

1. Let S be the solution space of a set of m homogeneous linear equations with real coefficients in n unknowns. If A is the matrix of this system of equations. Then
 (A) dimension of S = n-rank A (B) dimension of S is always n
 (C) dimension of S is infinite (D) dimension of S = n+rank A

2. The function $\frac{\sin(z)}{z^2}$ has
 (A) pole of order 2 at the origin with residue 1 (B) pole of order 1 at the origin with residue 1
 (C) pole of order 1 at the origin with residue 2 (D) None of these

3. Given any two events A and B, which of the following statements is not necessarily true?
 (A) $P(A) \geq P(A \cap B)$ (B) $P(B) \leq P(A \cup B)$ (C) $P(A \cap B) \leq P(A \cup B)$ (D) $P(A) + P(B) \leq P(A \cup B)$

4. A cricket ball bowled at 140km/hr is straight driven with heavy bat. At the instance of collision, the bat is moving towards the ball with a speed of 10km/hr. If the bat is much heavier than the ball, the speed with which the ball will travel is
 (A) 140km/hr (B) 160km/hr (C) 130km/hr (D) 150km/hr

5. Global warming is due to which of the following?
 (A) Green house gases absorb both visible and infrared radiation
 (B) Infrared radiation is absorbed by Green house gases where as visible radiation is not.
 (C) Infrared radiation is not absorb by Green house gases where as visible radiation is.
 (D) Earth is slowly coming closer to the sun

6. In an 8bit computer, which of the following number can not be represented

- (A) 264 (B) 132 (C) 0 (D) -132

Section B
Subsection: Mathematics

1. Let X and Y be two Banach spaces. Let $\langle T_n \rangle$ be a sequence of bounded linear operators from X to Y . Let T be another linear operator defined from X to Y such that $T(x) = \lim_{n \rightarrow \infty} T_n(x)$. Prove that T is also bounded.

Subsection: Statistics

2. A random sample of size n is available from a bivariate normal population with mean vector (μ_1, μ_2) . Develop a test procedure to test the hypothesis $H_0: \mu_1 = 2\mu_2$ against $H_1: \mu_1 \neq 2\mu_2$.

Subsection: Physics

3. In order to increase the efficiency of a Carnot engine most effectively, would you increase source temperature (T_1) keeping sink temperature (T_2) constant. Or would you decrease T_2 keeping T_1 constant. Explain analytically.

Subsection: Earth Sciences

4. Give a brief account on Global Warming with special reference to North east India.

Subsection: Engineering

5. Find the conversion time of a successive approximation A/D conversion which uses a 2 MHz clock and a 5 bit binary ladder containing 8V reference. What is the conversion rate?

MA IN SOCIOLOGY

Full Marks : 100

Time: 2 hrs.

The written test consist of the following:

1. 30 Objective type questions on general knowledge
2. Two short essay type question on issues of socio-economic relevance carrying 10 mark each.
3. Two-essay type question on sociological themes carrying 25 marks each.

1. Deabbreviate the following:
VAT, AIDS, BTAD

2. Match the following:

i. The Incas	i. Venezuela
ii. Hugo Chavez	ii. Peru
3. Answer the following:
 - i. What is the Capital City of Mongolia?
 - ii. What is the boundary line between India and Pakistan called?
4. Write short notes (within 150 words) :
 - i. Dowry system
 - ii. Sustainable Development
5. Write essay on the following (within 500 words):
 - i. Caste System in India
 - ii. Criminalization of Indian Politics

M.Tech. in Food Processing Technology

Full Marks : 100

Time: 2 hrs.

The question paper contains two sections viz. Section A and Section B of 50 marks each. Section A is of objective type and is further divided into two parts viz. Part I of 20 marks from 10+2 PCMB and Part II of 30 marks from Basic Food Chemistry/ Biochemistry/ Nutrition and Processing. Section B is of subjective type and contains 6 questions out of which 5 are to be attempted. Question no 1 and 2 of section B are compulsory.

(No negative marking for wrong answer)

Section: A (Objective)

Part I

Choose the correct answer and put the corresponding letter **a**, **b**, **c**, or **d** in the box provided against each question

1. The term independent of x in the expansion of $(x^2 + 1/x)^{12}$ is:

(a) 120 (b) 285 (c) 495 (d) 595

2. What is the formal charge of carbon in CH₄

(a) 1 (b) 2 (c) 0 (d) 4

3. *E. coli* is a

(a) Bacteria (b) Fungi (c) Algae (d) Protista

4. In an adiabatic process
 (a) Temperature remains constant (b) Pressure remains constant
 (c) Energy remains constant (d) Volume remains constant
5. Water has the highest density at
 (a) 0°C (b) 4°C (c) 25°C (d) 100°C
6. The SI unit for temperature is
 (a) °C (b) K (c) °F (d) °R

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Part II

7. The normal blood glucose level/100 ml in human body at fasting state is
 (a) 70-90 mg (b) 120-140 mg (c) 50-60 mg (d) 140- 160 mg.
8. The alcohol content in wine is between
 (a) 9-14% (b) 18-25% (c) 30-35% (d) 40-50%
9. Which one is called the milk sugar
 (a) Maltose (b) Lactose (c) Sucrose (d) Galactose
10. The microorganism most commonly found in spoiled canned food products is
 (a) *Clostridium* (b) *Salmonella* (c) *Shigella* (d) None of these
11. The percentage of total production of fruits that goes waste is
 (a) 20% (b) 30% (c) 40% (d) 50%
12. Glycogenesis is the
 (a) Formation of glucose (b) Formation of glycogen (c) Breakdown of glucose
 (d) Breakdown of glycogen
13. 20% m.c. on w.b. will be on d.b.
 (a) 50% (b) 25% (c) 15% (d) 10%
13. Degree of unsaturation in oils & fats is measured by
 (a) Iodine value (b) Saponification value (c) Acid value (d) All the above

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Section B

Attempt any 5 questions (Question no 1 and 2 are compulsory):

1. (a) How many milliliters of a 2.0M H₂SO₄ will be required to react with 20 g of NaOH
 (b) Write the principle of paper chromatography

2+3+3+2=10

2. (a) Evaluate $\int \frac{(2 \sin x + 3 \cos x)}{3 \sin x + 4 \cos x} dx$

(b) Express $\frac{3x^2 + 11x + 14}{(x - 4)(x^2 + 6x + 13)}$ as partial fraction.

3. Define the following
 a) Water activity
 b) Nutrition
 c) Weaning food
 d) Gluconeogenesis

e) Glycolysis

2x5=10

5. Write the processing methods for-
(a) Wine (b) Butter

5+5=10

6. (a) What is the relevance of microbiology in food processing and preservation?
(b) Write the importance of yeast in foods.

5+5=10

M. Sc. (Integrated) in Bioscience and Bioinformatics

Instruction: There are 50 multiple choice questions and attempt all questions. Each question has four options and only one is correct and you have to choose the right answer. Two marks will be awarded for each right answer and half mark will be deducted for each wrong answer.

1. The perpendicular distance from the origin to the straight line $4x+3y-5=0$ is

(a) 5 (b) 7 (c) $\sqrt{5}$ (d) 1.

2. The value of the determinant

$$\begin{vmatrix} 10 & 10 & 20 \\ 10 & 20 & 30 \\ 10 & 30 & 40 \end{vmatrix}$$

is

(a) 0 (b) 1 (c) 8000 (d) -1.

- Q2. Clover leaf model fits into

(a) endoplasmic reticulum of cell
(b) ZDNA
(c) tRNA
(d) none of the above

- Q3. Fill up the blank in the sentence with right choice " _____
bond is the building block of DNA, where as, _____ bond
of protein".

(a) H and polypeptide
(b) polynucleotide and polypeptide
(c) polypeptide and polynucleotide
(d) COOH and P0000

- Q4. The science which studies inheritance and variation is called as

(a) Inheritovariance
(b) Cytology
(c) Natural science
(d) Genetics

- Q5. Name the enzyme and the substrate responsible for luminascens in the firefly insect

(a) amylase and luciferrin
(b) luciferase and luciferrin
(c) protease and protein

(d) luciferase and starch

Q6. Insulin is synthesized from

- (a) α cells of the islets of Langerhans
- (b) β -cells of the islets of Langerhans
- (c) δ -cells of the islets of Langerhans
- (d) None of the above

Q7. A car weighing 500 kg, working against a resistance of 500 Newton accelerates from rest to 20 m/sec in 100 meters. The kinetic energy of the car is-

- (a) 5×10^4 Joule
- (b) 10×10^4 Joule
- (c) 15×10^4 Joule
- (d) 20×10^4 Joule

Q8. Which of the following statement is correct?

- (a) ΔH is +ve for exothermic reactions
- (b) ΔH is -ve for endothermic reactions
- (c) The enthalpy of fusion is negative
- (d) The heat of neutralization of strong acid with strong base is always the same

Q9. Which of the following metals react with H_2O at room temperature?

- (a) Ag
- (b) Fe
- (c) Al
- (d) Na

Q10. Bohr's model of an atom is based on-

- (a) Quantum theory
- (b) Dalton's atomic theory
- (c) Theory of electrolytic dissociation
- (d) Law of mass action

Q11. The weakest acid among the following is-

- (a) CH_3COOH
- (b) $ClCH_2COOH$
- (c) $Cl_2CHCOOH$
- (d) Cl_3CCOOH

Q12. Wart disease of potato is caused by-

- (a) *Pythium debaryanum*
- (b) *Phytophthora infestans*
- (c) *Peronospora destructor*
- (d) *Synchytrium endobioticum*

Integrated M.Sc. in Chemistry

Instruction: There are 50 multiple choice questions and attempt all questions. Each Choose the correct answer. Two marks will be awarded for each right answer and half mark will be deducted for each wrong answer.

- Predict the shapes of the following molecules with the help of Valence Shell Electron Pair Repulsion Theory:
i) NH_3 ii) SF_4 iii) CH_4
- Write down the bond order of the following species:
i) O_2 ii) N_2 iii) He_2

Integrated M.Sc. in Physics

Instruction: There are 50 multiple choice questions and attempt all questions. Each Choose the correct answer. Two marks will be awarded for each right answer and half mark will be deducted for each wrong answer.

- A cylinder with a height of 28.5cm and an inside diameter of 10.4cm is filled with pure water which is at normal temperature and pressure. What is mass of the water in kilograms?
(a) 0.242kg (b) 2.420Kg (c) 24.20Kg (d) 242.0Kg
- A ball is dropped out of a window near the top of a building. If it accelerates towards the ground at a rate of 9.80 m/s^2 , what is the velocity when it has fallen 4.00 m?
(a) -7.32 m/s (b) 6.95 m/s (c) 6.25 m/s (d) -8.85 m/s
- A car is traveling at 72.0 Km/h along a straight level road is brought uniformly to a stop in a distance of 40.0 m. if the car weights is $8.80 \times 10^3 \text{ N}$, what is the braking force?
(a) -5.00 m/s^2 (b) -6.00 m/s^2 (c) -6.60 m/s^2 (d) -7.20 m/s^2
- A painter on a scaffold drops a 1.50 Kg can of paint from a height of 6.00 m. what is the kinetic energy of the can when it is at a height of 4.00 m?
(a) 22.7 J (b) 32.7 J (c) 30.6 J (d) 29.4 J
- A 0.30 Kg piece of ice at 0°C is placed in a liter of water at room temperature (20°C) In an insulated container. Assuming that no heat is lost to the container, what is the final temperature of water?
(a) 0°C (b) 4°C (c) 20°C (d) 230°C
- Two resistors ($R_1 = 6 \Omega$ and $R_2 = 3 \Omega$) are connected in parallel across 12.0V battery. What is the current through each resistor?
(a) .5A and 1.0A (b) 1.0A and 2.0A (c) 2.0A and 3.0A (d) 2.0A and 4.0A
- A concave mirror has radius of curvature of 30 cm. If an object is placed 45 cm from the mirror, where is the image formed?
(a) 22.5 cm (b) 23.0 cm (c) 23.5 cm (d) 24.0 cm
- A biconvex lens has focal length of 12 cm. If an object is 18 cm from the lens, what kinds of image will be formed?
(a) virtual and inverted (b) virtual and upright (c) real and upright
(d) real and inverted
- Myopia or nearsightedness is corrected by
(a) A spherical lens (b) A magnifying lens (c) A converging lens
(d) A diverging lens
- When a capacitor (C) is charged through a resistance (R), the current (I) varies with time (t) according to the equation
(a) $I = I_0 (1 - e^{-t/RC})$ (b) $I = I_0 (e^{RC/t} - 1)$ (c) $I = I_0 e^{-t/RC}$ (d) $I = I_0 e^{RC/t}$

Integrated M.Sc. in Mathematics

The entrance test question paper will consist of 50 multiple-choice questions (all compulsory) of 2 marks each. For each wrong answer 0.5 mark will be deducted.
The duration of the test will be of 1 hour.

A few model questions are given below.

Choose the correct alternative.

1. The value of $\sin(\pi/3 - \sin^{-1}(1/2))$ is ☐
 (a) $\frac{1}{2}$ (b) $-\frac{1}{3}$ (c) $\frac{1}{4}$ (d) 1.
2. Let A be a nonsingular square matrix of order 3×3 . Then is $|adj(A)|$ equal to ☐
 (a) $|A|$ (b) $|A|^2$ (c) $|A|^3$ (d) $3|A|$.
3. Let $f : (0,5) \rightarrow R$ be defined by $f(x) = [x]$. The number point of discontinuity of f is ☐
 (a) 4 (b) 5 (c) 6 (d) 3.
4. Let $f : [0, 2\pi] \rightarrow R$ be defined by $f(x) = \sin x + \cos x$. The function f is strictly decreasing on ☐
 (a) $[0, \frac{\pi}{4}]$ (b) $(\frac{\pi}{4}, \frac{5\pi}{4})$ (c) $[\frac{5\pi}{4}, 2\pi]$ (d) $[0, \frac{\pi}{2}]$.
5. The area lying in the first quadrant and bounded by $y = \sqrt{4-x^2}$ and the lines $x = 0$ and $x = 2$ is ☐
 (a) π (b) $\pi/2$ (c) $\pi/3$ (d) $\pi/4$.
6. The area of the rectangle having A, B, C, and D as corner with position vectors $\hat{i} + (1/2)\hat{j} + 4\hat{k}$, $\hat{i} - (1/2)\hat{j} + 4\hat{k}$, and $-\hat{i} - (1/2)\hat{j} + 4\hat{k}$ respectively is ☐
7. Let $f : [0, \pi/2] \rightarrow R$ be defined by $f(x) = \sin x$ and $g : [0, \pi/2] \rightarrow R$ be defined by $g(x) = \cos x$. Then ☐
 (a) f and g are both one-one (b) f is one one but g is not one
 (c) g is one-one but f is not one (d) $f+g$ is one-one.
8. The solution of the differential equation $\frac{x}{y} + \frac{dy}{dx} = 0$ ☐
 represents a family of
 (a) circles (b) straight lines (c) ellipses (d) hyperbolas.
9. The set $S = \{z \in C : |z-3| + |z+3| = 5\}$ represents ☐
 (a) a circle (b) a parabola (c) an ellipse (d) a hyperbola.
10. The value of the determinant
$$\begin{vmatrix} 1 & a & b+c \\ 1 & b & c+a \\ 1 & c & a+b \end{vmatrix}$$
 is ☐
 (a) 1 (b) $a+b+c$ (c) 0 (d) -1.

ANNEXURE - I

IMPORTANT DATES

DATE OF ISSUE OF PROSPECTUS & APPLICATION FORM AND SUBMISSION

Issue of Prospectus

(a) For PG Degree / Diploma / Certificate / B. Tech. / Integrated M. Sc. programmes	March 2, 2009 to April 30, 2009
(b) For Ph.D. Programme	
(i) Spring Semester, 2009	November 3, 2008 to December 15, 2008 (date over)
(ii) Autumn Semester, 2009	March 2, 2009 to April 30, 2009
Last date of submission of Application	
(a) For PG Degree / Diploma / Certificate / B.Tech. / Integrated M.Sc. programmes	30 April, 2009
(b) For Ph.D. programme	
(i) Spring Semester, 2009	December 14, 2008 (date over)
(ii) Autumn Semester, 2009	April 30, 2009

ANNEXURE –II

SCHEDULE OF ENTRANCE EXAMINATIONS

**(A) For PG Degree / Diploma / Certificate / Integrated M. Sc. Programmes
(except B. Tech., MBA and Ph. D. Programmes)**

Tezpur University Entrance Examination

May 29, 2009 (10 AM to 12 Noon)	May 29, 2009 (2 PM to 4 PM)
M.A. in Cultural Studies M. Sc. in Applied Chemistry M.A./M. Sc. in Mathematics Integrated M. Sc. in Bioscience & Bioinformatics (10 -11 AM) Integrated M. Sc. in Chemistry (11:30 AM – 12:30 PM)	PG Diploma in Tourism Management M. Tech. in Bioelectronics M. Sc. in Nanoscience & Technology Integrated M. Sc. in Mathematics (2 – 3 PM) Integrated M. Sc. in Physics (3:30 – 4:30 PM)
May 30, 2009 (10 AM to 12 Noon)	May 30, 2009 (2 PM to 4 PM)
Master of Computer Application (MCA) M. Tech. in Energy Technology M. A. in Sociology	M. Tech. in Electronics Design & Technology M. Tech. in Food Processing Technology M.A. in Mass Communication & Journalism
May 31, 2009 (10 AM to 12 Noon)	May 31, 2009 (2 PM to 4 PM)
M. Sc. in Environmental Science M. Tech. in Computational Seismology Certificate in Chinese P. G. Diploma in Community Communication	M. Tech. in Information Technology M. Sc. in Physics M.A. in English M. Sc. in Molecular Biology & Biotechnology (for NE domicile)*

* Combined Entrance Examinations conducted by JNU for selection of candidates for the seats other than reserved for NE domicile will be held on a date specified by DBT, JNU.

(B) For B. Tech. programme: AIEEE conducted by CBSE to be held on 26 April, 2009 (Sunday).

Note: Personal interview will be held for short listed candidates for the programme of M.A. in Mass Communication and Journalism, M. Tech. in Computational Seismology, M. Sc. in MBBT and P. G. Diploma in Tourism Management.

Schedule of Group Discussion / Personal Interview for P. G. Programmes

For programmes other than MBA full time (wherever applicable as given above)	Starts on 15 June and may continue to 16 June, 2009
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Declaration of TUEE Results: Fourth Week of June, 2009

(C) Schedule of Personal Interview (& written test wherever applicable) for Ph. D. Programme

Spring Semester, 2009	20– 21 December, 2008 (date over)
Autumn Semester, 2009	18 – 19 June, 2009

ANNEXURE- III

Schedule of Admission – 2009

Programmes	Main List	Waiting List
B. Tech. programme	15 July, 2009 (10 AM to 12 Noon)	15 July, 2009 (1 PM to 3PM) Waiting List I 16 July, 2009 (10 AM to 12 Noon) Waiting List II
M.A./M. Sc. in Mathematics Integrated M. Sc. in Mathematics M. Tech. in Computational Seismology M. Sc. in Applied Chemistry Integrated M. Sc. in Chemistry M. Tech. in Information Technology PG Diploma in Tourism Management Master of Business Administration	22 July, 2009 (10 AM to 1 PM)	22 July, 2009 (2PM to 4 PM)
M. Sc. in Molecular Biology & Biotechnology Integrated M. Sc. in Bioscience & Bioinformatics M. A. in Cultural Studies M. Tech. in Bioelectronics M. A. in Mass Communication & Journalism P. G. Diploma Community Communication M. Tech. in Energy Technology M. Tech. in Electronics Design & Technology	23 July, 2009 (10 AM to 1 PM)	23 July, 2008 (2PM to 4 PM)

M. Sc. in Environmental Science M. Sc. in Physics Integrated M. Sc. in Physics M. Sc. in Nanoscience and Technology MCA M.A. in English M. Tech. in Food Processing Technology M. A. in Sociology Certificate in Chinese	24 July, 2009 (10 AM to 1 PM)	24 July, 2009 (2PM to 4 PM)
Ph.D. (a) Spring Semester, 2009	19-20 January, 2009 (10 AM to 3 PM) date over	
(b) Autumn Semester, 2009	27-28 July, 2009 (10 AM to 2 PM)	

ANNEXURE- IV

FEE STRUCTURE FOR PG / B. Tech/ DIPLOMA / CERTIFICATE PROGRAMME

Particulars	Mode	MCA	M. Tech	M. A	M. Sc.	M. A. in MCJ	PGDT M	B. Tech	Certificate in Chinese
Admission fee	Once on admission	200/-	200/-	200/-	200/-	200/-	200/-	200/-	200/-
Enrolment fee (form 2nd semester onward)	Per semester	200/-	200/-	200/-	200/-	200/-	200/-	200/-	200/-
Tuition fee	Per semester	2,000/-	2,000/-	1,000/-	1200/-	5,000/-	2,000/-	7,000/-	500/-
Library fee	Per semester	300/-	300/-	300/-	300/-	300/-	300/-	300/-	300/-
Students' activity fee	Per semester	250/-	250/-	250/-	250/-	250/-	250/-	250/-	250/-
Medical fee	Per semester	200/-	200/-	200/-	200/-	200/-	200/-	200/-	200/-
Convocation fee	Once on admission	500/-	500/-	500/-	500/-	500/-	500/-	500/-	
Transport fee	Per semester	500/-	500/-	500/-	500/-	500/-	500/-	500/-	500/-
Placement Brochure fee	Once on admission	-	-	-	-	1500/-	-	-	
Identity card fee	Once on admission	50/-	50/-	50/-	50/-	50/-	50/-	50/-	50/-
Laboratory fee (including Computer usage)	Per semester	500/-	500/-	200/-	500/-	500/-	200/-	400/-	
Caution deposit (Library & Laboratory)	Once on admission	1,000/-	1,000/-	1,000/-	1000/-	1,000/-	1,000/-	2,000/-	1000/-
Hostel Caution deposit	Once on admission	1,000/-	1,000/-	1,000/-	1,000/-	1,000/-	1,000/-	1000/-	
Provisional certificate fee	Once on admission	100/-	100/-	100/-	100/-	100/-	100/-	100/-	100/-
Examination fee (Theoretical)	Per semester	200/-	200/-	200/-	200/-	200/-	200/-	200/-	200/-
Examination fee Practical/ Dissertation	Per semester	150/-	150/-	150/-	150/-	150/-	150/-	150/-	
Grade Card	Per semester	50/-	50/-	50/-	50/-	50/-	50/-	50/-	50/-
Charges for consumables	Per semester	-	-	-	-	5,000/-	-	-	
Outdoor activities fee	Per semester	-	-	-	-	-	3500/-	-	
Tezpur University Alumni Association fee	Once on admission	500/-	500/-	500/-	500/-	500/-	500/-	500/-	500/-
Hostel Admission/re-admission fees	Per semester in case of Hostel boarder	1,500/-	1,500/-	1,500/-	1500/-	1,500/-	1,500/-	1,500/-	
Hostel Mess Advance	Once on admission	1,500/-	1,500/-	1,500/-	1500/-	1,500/-	1,500/-	1,500/-	

(in case of Hostel boarder)									
Infrastructure & amenity fee	Per semester	500/-	500/-	500/-	500/-	500/-	500/-	500/-	500/-
Fan, Electricity & water Charges	Per semester	250/-	250/-	250/-	250/-	250/-	250/-	250/-	250/-
Students' Welfare Fund	Per semester	100/-	100/-	100/-	100/-	100/-	100/-	100/-	100/-
Medical Insurance	Per semester	172/-	172/-	172/-	172/-	172/-	172/-	172/-	172/-
Total	(on admission time)	11522/-	11522/-	10222/-	10722/-	21022/-	14722/-	17422/-	4872/-
Total	(2nd semester onward)	6872/-	6872/-	5572/-	6072/-	14872/-	10072/-	11772/-	3222/-

ANNEXURE –V

FEE STRUCTURE FOR Ph. D. PROGRAMME

Particulars	Mode	Ph.D. Full Time	Ph. D (Part time Sponsored)
Admission fee	Once on admission	200/-	200/-
Enrolment fee	Per semester form second semester	200/-	200/-
Tuition fee	Per semester	1500/-	2000/-
Library fee	Per semester	300/-	300/-
Students' activity fee	Per semester	250/-	250/-
Medical fee	Per semester	200/-	200/-
Convocation fee	Once on admission	500/-	500/-
Transport fee	Per semester	500/-	500/-
Identity card fee	Once on admission	50/-	50/-
Laboratory fee (including Computer usage)	Per semester	500/-	500/-
Caution deposit (Library & Laboratory)	Once on admission	2,000/-	2000/-
Hostel Caution deposit	Once on admission	1,000/-	1,000/-
Provisional certificate fee	Once on admission	100/-	100/-
Registration	Once on admission	500/-	500/-
Thesis Evaluation including Viva Voce	At the time submission	3000/-	4000/-
Revised Thesis Evaluation	At the time of Revise Evaluation	1000/-	1000/-
Migration	When applied	100/-	100/-
Course Transfer	When applied	200/-	200/-
Alumni Association fee	Once on admission	500/-	500/-

Hostel Admission/re-admission fees	Per semester in case of Hostel boarder	1,500/-	1,500/-
Hostel Mess Advance	Once on admission (in case of Hostel boarder)	1,500/-	1,500/-
Infrastructure & amenity fee	Once at the time of admission	500/-	500/-
Fan, Electricity & water Charges	Per semester	250/-	250/-
Students' Welfare Fund	Per semester	100/-	100/-

ANNEXURE –VI

FEE STRUCTURE FOR INTEGRATED M. Sc. PROGRAMME

Particulars	Mode of Payment	Fee (Rs.)
Admission fee	Once on admission	200.00
Enrolment Fee	From Second Semester onwards	200.00
Tuition fee	Per semester	3500.00
Library fee	Per semester	300.00
Students' activity fee	Per semester	250.00
Medical fee	Per semester	200.00
Convocation fee	Once on admission	500.00
Transport fee	Per semester	500.00
Identity card fee	Once on admission	50.00
Laboratory fee (including computer usage)	Per semester	400.00
Caution deposit (Library & Laboratory)	Once on admission	2500.00
Hostel Caution deposit	Once on admission	1000.00
Provisional Certificate	Once on a admission	100.00
Examination Fee (Theoretical)	Per semester	200.00
Examination Fee (Practical/ dissertation)	Per semester	150.00
Grade Card	Per semester	50.00
Alumni Association fee	Once on admission	500.00
Hostel Admission/re-admission fees	Per semester in case of Hostel boarder	1500.00
Hostel Mess Advance	Once on admission (in case of Hostel boarder)	1500.00
Infrastructure & amenity fee	Per Semester	500.00
Fan, Electricity, Water Charges	Per Semester	250.00
Student Welfare Fund	Per Semester	100.00
Medical Insurance	Per Semester	172.00
Total	(on admission time)	14422.00
Total	(second semester onwards)	8272.00

ANNEXURE –VII

Fee Structure for Post Graduate Diploma in Community Communication (Part Time) programme

Particulars	Mode	Fee (Rs.)	
		Internal (Those who are doing full time programme in TU)	External (without Hostel)
Admission Fee	Once on admission	200	200
Enrollment fee (from second semester onward)	Per semester	200	200
Tuition fee	Per semester	4000	4000
Library fee	Per semester	300	300
Students' activity fee	Per semester	0	250
Medical fee	Per semester	0	0
Convocation fee	Once on admission	500	500
Transport fee	Per semester	0	500
Placement brochure fee	Once on admission	250	250
Identity card fee	Once on admission	0	50
Laboratory fee (including computer usage)	Per semester	500	500
Caution deposit (Library & Laboratory)	Once on admission	0	1000
Hostel Caution Deposit	Once on admission	0	0
Provisional certificate fee	Once on admission	100	100
Examination fee (Theoretical)	Per semester	200	200
Examination fee Practical/Dissertation	Per semester	150	150
Grade card	Per semester	50	50
Charges for consumables	Per semester	1000	1000
Outdoor activities fee	Per semester	500	500
Tezpur University Alumni Association fee	Once on admission	0	500
Hostel admission/readmission fee	Once on admission	0	0
Hostel mess advance (in case of hostel boarder)	Once on admission	0	0
Infrastructure and amenity fee	Per semester	0	500
Fan, electricity and water charges	Per semester	0	250
Students' welfare fund	Per semester	0	100
Medical insurance	Per semester	0	0
Total	(on admission time)	7750	10900
Total	2nd Semester onward	6900	8500

ANNEXURE –VIII

SELECTED RESEARCH PUBLICATIONS OF THE DEPARTMENTS

DEPARTMENT OF BUSINESS ADMINISTRATION

1. Chandana Goswami : Managing the Technical Professional Workforce : Can Knowledge Management be the Answer ? (Chapter of an edited book –“*Managing , Trade, Technology and Environment*” by M. Mallikarjun and P.K. Chugan, 2004).
2. Chandan Goswami : A strategic approach to check deforestation and minimize its environmental effect – A case study of Sonitpur District (Chapter of an edited book “*Managing , Trade, Technology and Environment*” by M. Mallikarjun and P.K. Chugan, 2004).

DEPARTMENT OF CHEMICAL SCIENCES

1. B. Gohain and R. K. Dutta : Premiceller and micelle formation behavior of dye surfactant ion-pairs in aqueous solutions : Deprotonation of dye in ion-pair micelles, *J. Colloid Interf. Sci.* 323(2008) 395-402
2. B. Kalita and R. C. Deka : Stability of small Pdn (n=1-7) clusters on the basis of structural and electronic properties: A density functional approach, *J. Chem. Phys.* 127 (2007) 244-306.

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

1. S. M. Hazarika and Bibha Roy: Semantic Search of Unstructured Data using Qualitative Analysis. *International Journal of Knowledge Management* : 4(2), 35-45(2008).
2. B. Bora and D. K. Bhattacharyya : DDSC: A Density Differential Spatial Clustering Technique, in the Journal of Computers (Academy Publisher), 3(2): 72-79(2008).

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

1. S. Borah, E L Hines, and M Bhuyan, “Wavelet transform based image texture analysis for size estimation applied to the sorting of tea granules”, *Int. Journal of Food Engineering* (Elsevier), Vol. 79, pp 629-639, 2007.
2. P.P. Sahu, “Tunable Optical Add/Drop Multiplexers using Cascaded Mach Zehnder Coupler”- Fiber and integrated optics (Taylor and Francis), Vol-27 (1), 24-34, 2008.

DEPARTMENT OF ENERGY

1. D. C. Baruah and G. C. Bora : Energy Demand Forecast Mechanized Agriculture in Rural India. *Energy Policy*, 36: 2628 – 2636 (2008).
2. D. C. Baruah and P. K. Dutta : An investigation into the energy use in relation to yield of rice(*oryza sativa*) in Assam, India. *Agriculture, Ecosystems and Environment*, 120(2-4) : 185-191 (2007)

DEPARTMENT OF ENGLISH AND FOREIGN LANGUAGES

1. Madan M. Sarma : “Translating Shakespeare : Intervention and Universals in Translation”. In *Trans-kom*, (Germany) 1:1, 2008, 74-87.
2. M. Barborá : “The particle ne in direct yes-no questions”. In Bayer, Josef, Tanmoy Bhattacharya, and M.T. Hany Babu. *Linguistic Theory and South Asian Languages : Essays in Honour of K.A. Jayaseelan*, Vol 102. John Benjamins Publishing Company, 2007, 199-214.

DEPARTMENT OF ENVIRONMENTAL SCIENCE

1. P. V. Sundareshwar, R. Murtugudde, G. Srinivasan, S. Singh, K.J. Ramesh, D. Agarwal, D. Baldocchi, C. K. Barua and K.K. Baruah : Environment : Environmental monitoring network for India. *Science (USA)* 316:204-205 (2007).
2. Raza R. Hoque *et. al.* : Spatial and temporal variation of BTEX in the urban atmosphere of Delhi, India. *Sci. Total Environ.* 392(1) 30-40 (2008).

DEPARTMENT OF FOOD PROCESSING TECHNOLOGY

1. S. C. Deka, N. Barman, and A.A.L.H. Baruah.: Monitoring of pesticide residues in feed, fodder and butter in Assam. *Pesticide Research Journal*, 16(1) : 86-89(2004).

2. S. C. Deka, N. Barman, and A.A.L.H. Baruah : Pesticidal contamination status in farmgate vegetables in Assam, India. *Pesticide Research Journal*, 17(2): 90-93 (2005).

DEPARTMENT OF MATHEMATICAL SCIENCES

1. N. Deka Baruah and B.C. Berndt : Ramanujan's series for $1/\pi$ arising from his cubic and quartic theories of elliptic functions. *Journal of Mathematical Analysis and Applications*, Vol. 341, No. 1, pp. 357–371, 2008
2. M. Borah, S. Deka and S. C. Kakaty : Use of Probability Distributions for the Analysis of Daily Rainfall Data of North East India. *Mausam*, 59 (4), 518-527, 2008.

DEPARTMENT OF MOLECULAR BIOLOGY AND BIOTECHNOLOGY

1. A. K. Mukherjee, R. Doley, and D. Saikia : Isolation of a snake venoms phospholipase A₂ (PLA₂) inhibitor (AIPLAI) from leaves of *Azadirachta indica* (Neem): mechanism of PLA₂ inhibition by AIPLAI in vitro condition. *Toxicon* 51, 1548-1553 (Published by Elsevier Science, U.K.) (2008).
2. A. K. Mukherjee : Phospholipase A₂ -interacting weak neurotoxins from venom of monocled cobra *Naja kaouthia* display cell specific cytotoxicity. *Toxicon* 51, 1538-1543 (Published by Elsevier Science, U.K.) (2008).

DEPARTMENT OF PHYSICS

1. D.K. Bora and P. Deb : Fatty acid binding domain mediated conjugation of ultrafine magnetic nanoparticles with albumin protein *Nano. Res. Lett.* 4, 138 (2009).
2. N. H. Shah and J. K. Sarma : Spin-dependent DGLAP evolution equations and t-distribution of longitudinally polarized structure functions in leading order and next-to-leading order at low-x, *Phys. Rev. D* 77, 074023-1-074023-5 (2008).

DEPARTMENT OF SOCIOLOGY

1. C. K. Sharma : "Globalization As Political Economy of Cultural Anarchy: Implications for Northeast India" in *Human Securities in North East India*. Ed. by A.R. Dutta. Anwesha. Guwahati.2009
2. C. K. Sharma : "Genealogy Contested : Oral Discourse and Identity Construction: The case of the Bodos in Assam", in *Folklore As Discourse*, Ed. M.D. Muthukumaraswamy, National Folklore Support Centre, 2007, Chennai.

CULTURAL STUDIES

1. P.M. Sarma, 2008. 'The Mind, the Body and the Earth: Coetzee's Violent Geographies in the Dusklands' in J.M. Coetzee: *Critical Perspectives*. (ed) K. C. Banal. New Delhi: Pencraft International.
2. P.M. Sarma, 2006. "The Oral and the Written in a period of Globalisation" in *Indian Folklore Research Journal*. Vol 3 No. 6 Chennai: NFSC.

CONTACT ADDRESSES

All enquiries about academic programmes and entrance examination qualifications should be directed to concerned Department offices. Enquiries relating to receipt of applications, entrance examination centre and other matters relating to the entrance examinations should be directed to the Controller of Examinations at 03712-267114.

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Molecular Biology and Biotechnology	5400	9957184351	mbbt@tezu.ernet.in
Computer Science & Engineering	5100	9957191527	cs@tezu.ernet.in
Physics	5550	9954449470	physics@tezu.ernet.in
Mass Communication and Journalism	5450	9954449472	masscom@tezu.ernet.in
Energy	5300	9957191529	energy@tezu.ernet.in
Electronics & Communication Engineering	5250	9954449462	electronics@tezu.ernet.in
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