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Gauhati University Inspection Team in CIT, Kokrajhar.



Farewell to outgoing BoG Chairman, Prof. Kulendu Pathak.



CIT Kokrajhar welcomes the new BoG Chairman, Prof. Gautam Barua.



CIT 6th BoG Meeting in IIT Guwahati Guest House.



Jt. Secretary, MHRD, Pravin Prakash with Kampha Borgoyary, Dy. Chief, BTC, on a visit to CIT, Kokrajhar.



Principal D.S. Pegu handing over charge to Director, Prof. M. Jawed.

1. INTRODUCTION

Central Institute of Technology (CIT), Kokrajhar is an autonomous Institute funded by the Ministry of Human Resource Development (HRD), Government of India. It was established as an outcome of the Memorandum of Settlement (MoS) on Bodoland Territorial Council (BTC) signed between the Assam Government, the Union Government and the Bodo Liberation Tigers, on February 10, 2003, in New Delhi. Consequently, CIT started to function from December 06, 2006. The Institute is run by an autonomous body registered with the Societies Registration Act 1860 and functions under a Board of Governors (BoG).

CIT was established for the basic objective of fulfilling the aspirations of the Bodo people relating to their cultural identity, language, education and overall economic development of the region. The academic programmes and curriculum lay emphasis on imparting the youth with requisite technological and vocational training to produce the required manpower to give an impetus for economic growth of this area and to integrate the people of Bodoland into the mainstream of technical and vocational Education.

CIT is mandated to impart technical and vocational education such as Information Technology, Bio-Technology, Food Processing, Rural Industries, Business Management, etc. as part of the concerted efforts being made by the Government of India and the Government of Assam to fulfill the aspirations of the people of Bodoland and the entire region.

2. VISION AND MISSION

VISION

- To be a Centre of Excellence in Technical and Vocational Education.
- To build a high-tech campus with all infrastructure and the state-of-art facilities committed to facilitate and promote vocational skills and training.
- To employ innovative teaching, training and learning methodologies and implement target group-specific skills development programmes.
- To foster Institute Industry participation to build synergies in entrepreneurship, market oriented programmes and employability of participants in technology-intensive

enterprises.

- To contribute to the socio-economic development of the region.

MISSION

- To ensure access to education, training, knowledge and technology for promoting skills and innovations to all.
- To address challenges in rapid shifts in the nature of demand for skills by emphasizing on research, development, commercialization and industrialization with necessary thrust to shift from traditional mass approaches to provide more customized training.
- To focus on Institute Industry partnership to implement innovative strategies to create new entrepreneurs, enterprises and industries with access to leading edge skills and on-the-job training.
- To empower the people to fulfill their aspirations by fostering know how in technology and vocational training to produce skilled and trained manpower from the area by serving as a link between education, industry and economic self reliance.

3. PROGRAMMES OFFERED BY THE INSTITUTE

At present the programmes offered by the Institute are

- Diploma** (3 years) in Electronics and Telecommunications, Computer Science, Control and Instrumentation Engineering, Food Processing Technology, Construction Technology and Animation and Multimedia Technology.
- B.Tech.** (4 years) in Electronics and Communications Engineering, Computer Science and Engineering, Instrumentation Engineering, Food Processing Technology, Civil Engineering(Construction Technology) and Information Technology.

4. RECOGNITION & AFFILIATION:

The Diploma courses are approved by AICTE and affiliated to State Council for Technical Education, Assam, while the B.Tech. courses are approved by AICTE and affiliated to

Gauhati University, Guwahati.

5. FACILITIES OF THE INSTITUTE:

(a) Hostel Facility:

There are separate hostels for boys and girls. At present, two hostels inside the campus with a capacity of 230 each are being run as boys' hostel. The Institute has temporarily designated separate hostels for boys and girls outside the campus. There are ten girls' hostels and twelve boys' hostel outside the campus. Each hostel has a warden. Strict hostel rules and regulations are enforced in the hostels. The Institute endeavours to provide hostel accommodation to all the admitted candidates but does not guarantee one.

(b) Laboratory Facility:

The Institute has well established laboratories catering to the needs of both diploma and Degree programmes. Laboratory courses are designed to support theoretical concepts taught. The Laboratories of the institute boast of state of the art equipments and contemporary software tools. The students are exposed to the best experimental practices under expert guidance from faculty members and laboratory staff. The neighbouring institutes are using the laboratory facilities of the institute.

(c) Computer Centres:

The institution has two central computer centres with more than two hundred and fifty nodes and departmental computer centres in ECE, IE, CE, IT and AMT equipped with the latest Operating Systems and applications software. The computer centres are connected with a 1Gbps leased line for Internet access through a wireless LAN and NKN connectivity of 2Gbps leased line.

(d) Library Facility:

The Institute has a Library with more than 40,000 volumes (reference and text books) and it is in the process of acquiring more numbers of Printed and Online Journals. The Library is a member of AICTE-INDEST consortium through which the

Institute can access e-journals of different subjects. The services provided by the Library are: Lending Services, Reference Service, Current Awareness Service (CAS), Inter Library Loan Service (ILL), Reading Room Service, User Awareness and Photocopying Services. Computerisation of the Library is in the process.

(e) Transport Facility:

At present the Institute has 8 buses plying to and fro from Kokrajhar town to facilitate the transportation of the students to the Institute.

(f) Training And Placement Cell:

The Institute has a separate cell for Training and Placement consisting of three faculty members headed by a Training & Placement Officer (TPO). The Cell organizes and coordinates Campus Placement Programmes, frequent industrial visits, inplant trainings and projects of industrial relevance to the students, with the sole aim of zeroing down the hiatus between the industry and the academia.

(g) Sports:

To encourage the students to take part in sports, the Institute has made facilities for Basketball, Volleyball, Lawn Tennis, Badminton and Table Tennis. Facilities for other sports are in the process of construction. Indoor games such as carom board, chess, etc. are made available in the hostels for recreation and relaxation.

(h) Canteen:

At present the Institute has a Canteen functioning in the Campus to cater to the food requirements of both the staff and the students. The permanent building of the Canteen is under construction and is expected to be handed over by the mid of 2014. The Institute plans to have two canteens to meet the high demands of the staff and the students.

(i) Internet Facility:

The Administrative building, academic block, laboratories, workshops, staff transit hostel, guest house and hostels within the campus have been provided internet connections. Wifi Connectivity

is also available to both the staff and the students within the campus.

(j) Medical And Health Service:

The Institute has made arrangements for medical care by making a medical officer available in the Institute everyday in the afternoon hours for consultation. The construction of the Institute Dispensary is in progress. The purchase of an ambulance for the institute is in an advanced stage to cater to medical emergencies of both staff and students.

(k) Guest House:

The institute has a Guest House with A/C and non A/C rooms which is primarily meant for the guests of the institute. A full-fledged Conference Room forms a part of the Guest House.

6. BRANCHES AND INTAKE CAPACITY:

The following are the branches and intake capacity for admission to first year (first semester) of Diploma Course in the Institute.

Branches	Intake Capacity
Electronics and Telecommunication Engineering (Et)	30
Computer Science (Co)	30
Control & Instrumentation Engineering (CAI)	30
Food Processing Technology (FPT)	30
Construction Technology (CT)	30
Animation & Multimedia Technology (AMT)	30

Out of the total number of seats, 80% of the seats are offered through CITEE conducted by CIT, Kokrajhar while 20% of the seats drawn from those seats reserved for BTAD and North East Assam are offered through Polytechnic Admission Test (PAT) conducted by Directorate of Technical Education, Assam.

The following are the branches and intake capacity for admission to first year (first semester) of Degree Course in the Institute under Direct Entry.

Branches	Intake Capacity (Direct Entry)
Electronics and Communication Engineering (ECE)	30
Computer Science and Engineering (CSE)	30
Instrumentation Engineering (IE)	30
Food Processing Technology (FPT)	30
Civil Engineering (Construction Technology) – (CE)	30
Information Technology (IT)	30

Out of the total seats under Direct Entry Scheme, 40% of the seats are offered for those candidates having qualifying marks in JEE Main 2014 and cutoff marks as decided by the Admission Committee of CIT and 60% of the seats for those having qualifying marks in CITDEE 2014

The following are the branches and intake capacity for admission to Second year (third semester) of Degree Course in the Institute under Lateral Entry.

Branches	Intake Capacity		
	Vertical	Lateral	Total
Electronics and Communication Engineering (ECE)	30	6	36
Computer Science and Engineering (CSE)	30	6	36
Instrumentation Engineering (IE)	30	6	36
Food Processing Technology (FPT)	30	6	36
Civil Engineering (Construction Technology) – (CE)	30	6	36
Information Technology (IT)	30	6	36

Under the Lateral Entry Scheme, 30 seats in each branch are reserved for eligible candidates of CIT through Vertical mobility while 6 seats are open for candidates from other AICTE recognized institutes.

7. DIPLOMA COURSE STRUCTURES:

1st YEAR : SEMESTER – I (JULY – DEC) : COMMON TO ALL BRANCHES

Sl. No	Code No.	Subject	Study Scheme (Contact hr./Week)			Evaluation Scheme				Total Mark
						Theory		Practical		
			L	T	P	Exam	Sess.	Ex/Viva	Sess.	
1	Hu-101	Communication in English-I	3	-	-	21/70	9/30	-	-	100
2	Sc-102	Mathematics-I	3	1	-	21/70	9/30	-	-	100
3	Sc-103	Chemistry-I	3	-	3	21/70	9/30	15/50	15/50	200
4	Sc-104	Applied Physics-I	3	-	3	21/70	9/30	15/50	15/50	200
5	Me-101	Engineering Drawing	-	1	6	-	-	40/100	50/100	200
6	W-101	Basic Workshop Practice-I	-	1	6	-	-	50/100	50/100	200
Total										1000

1st YEAR : SEMESTER – II (JULY – DEC) : COMMON TO ALL BRANCHES

Sl. No	Code No.	Subject	Study Scheme (Contact hr./Week)			Evaluation Scheme				Total Mark
						Theory		Practical		
			L	T	P	Exam	Sess.	Ex/Viva	Sess.	
1	Hu-201	Communication in English-II	3	-	-	21/70	9/30	-	-	100
2	Sc-202	Mathematics-II	3	1	-	21/70	9/30	-	-	100
3	Sc-203	Chemistry-II	3	-	3	21/70	9/30	15/50	15/50	200
4	Sc-204	Applied Physics-II	3	-	3	21/70	9/30	15/50	15/50	200
5	Me-201	Engineering Mechanics	3	-	3	28/70	15/30	25/50	25/50	200
6	W-201	Basic Workshop Practice-II	-	1	6	-	-	50/100	50/100	200
Total										1000

7.1 ELECTRONICS & TELECOMMUNICATION ENGINEERING

2nd YEAR: SEMESTER – III

Sl. No	Code No.	Subject	Study Scheme (Contact hour/week)			Evaluation Scheme				Total Mark
						Theory		Practical		
			L	T	P	Exam	Sess	Ex/Viva	Sess	
1	Co-301	Computer Application	2	-	6	28/70	15/30	12/25	13/25	150
2	Hu-302	Engineering Economics & Accountancy	3	1	-	28/70	15/30	-	-	100
3	Sc-303	Mathematics-III	3	2	-	28/70	15/30	-	-	100
4	El-304	Elements of Electrical Engineering	3	-	3	28/70	15/30	12/25	13/25	150
5	Et-305	Analog Electronics-I	3	-	3	28/70	15/30	12/25	13/25	150
6	Et-306	Electronic Workshop	-	1	6	-	-	50/100	25/50	150
Total										800

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2nd YEAR: SEMESTER – IV

Sl. No.	Code No.	Subject	Study Scheme (Contact hour/week)			Evaluation Scheme				Total Mark
						Theory		Practical		
			L	T	P	Exam	Sess	Ex/Viva	Sess	
1	El-401	Electrical Circuit & Network	3	-	3	28/70	15/30	12/25	13/25	150
2	Et-401	Communication Engineering	3	-	4	28/70	15/30	12/25	13/25	150
3	Et-402	Electronic Tests & Measurements	3	-	-	28/70	15/30	-	-	100
4	Et-403	Digital Electronics	3	-	3	28/70	15/30	12/25	13/25	150
5	Et-404	Computer Programming	-	1	6			25/50	25/50	100
6	Et-405	Analog Electronics-II	3	-	3	28/70	15/30	12/25	13/25	150
Total										800

3rd YEAR: SEMESTER – V

Sl. No	Code No.	Subject	Study Scheme (Contact hour/week)			Evaluation Scheme				Total Mark
						Theory		Practical		
			L	T	P	Exam	Sess	Ex/Viva	Sess	
1	Et-501	Communication Engineering – II	3	-	3	28/70	15/30	12/25	13/25	150
2	Et-502	Microprocessor	3	-	3	28/70	15/30	12/25	13/25	150
3	Et-503	Power Electronics	3	-	3	28/70	15/30	12/25	13/25	150
4	Et-504	P.C. System Technology	3	-	6	28/70	15/30	12/25	13/25	150
5	Et-505	Electronic Circuit Trouble Shooting	-	-	6	-	-	25/50	25/50	100
ELECTIVE (ANY ONE)										
6	Et-506	Computer Aided Electronic Design	3	-	-	28/70	15/30			100
7	Et-507	Electronics Instrumentation	3	-	-	28/70	15/30			100
8	Et-508	PCB Technology	3	-	-	28/70	15/30			100
9	Et-509	Control System	3	-	-	28/70	15/30			100
Total										800

3rd YEAR: SEMESTER – VI

Sl. No.	Code No.	Subject	Study Scheme (Contact hour/week)			Evaluation Scheme				Total Mark
						Theory		Practical		
			L	T	P	Exam	Sess	Ex/Viva	Sess	
1	Hu-601	Industrial Management & Entrepreneurship	3	-	-	28/70	15/30	-	-	100
2	Et-601	Consumer Electronics & Maintenance	3	-	3	28/70	15/30	12/25	13/25	150
3	Et-602	Data Communication & Networking	3	-	3	28/70	15/30	12/25	13/25	150
4	Et-603	Optical Fibre Communication	3	-	-	28/70	15/30	-	-	100
5	Et-610	Project, Seminar, General Viva	-	10	-	-	-	25/50	50/100, 25/50	200
ELECTIVE (ANY ONE)										
6	Et-604	Medical Electronics	3	-	-	28/70	15/30	-	-	100
7	Et-605	Modern Communication System	3	-	-	28/70	15/30	-	-	100
8	Et-606	Microwave Techniques	3	-	-	28/70	15/30	-	-	100
9	Et-608	Digital Signal Processing	3	-	-	28/70	15/30	-	-	100
10	Et-609	Advance Microprocessor	3	-	-	28/70	15/30	-	-	100
Total										800

7.2 COMPUTER SCIENCE

2nd YAR: SEMESTER – III

Sl. No.	Code No.	Subject	Study Scheme (Contact hour/week)			Evaluation Scheme				Total Mark
						Theory		Practical		
			L	T	P	Exam	Sess	Ex/Viva	Sess	
1	Co-301	Computer Application	2	-	6	28/70	15/30	12/25	13/25	150
2	Hu-302	Engineering Economics & Accountancy	3	1	-	28/70	15/30	-	-	100
3	Sc-303	Mathematics-III	3	2	-	28/70	15/30	-	-	100
4	Co-304	Programming Using C	3	-	6	28/70	15/30	25/50	25/50	200
5	Et-304	Elements of Electronics Engineering	3	-	3	28/70	15/30	12/25	13/25	150
6	Co-305	Computer Organization & Architecture	3	-	-	28/70	15/30	-	-	100
Total										800

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2nd YEAR: SEMESTER – IV

Sl. No.	Code No.	Subject	Study Scheme (Contact hour/week)			Evaluation Scheme				Total Mark
						Theory		Practical		
			L	T	P	Exam	Sess	Ex/Viva	Sess	
1	El-401	Electrical Circuit & Network	3	-	3	28/70	15/30	12/25	13/25	150
2	Co-401	Data Structure using C	3	1	3	28/70	15/30	12/25	13/25	150
3	Co-402	System Programming	3	-	-	28/70	15/30	-	-	100
4	Co-403	Microprocessor	3	-	3	28/70	15/30	12/25	13/25	150
5	Co-404	Elements of Multimedia	3	-	3	28/70	15/30	12/25	13/25	150
6	Et-403	Digital Electronics	3	-	-	28/70	15/30	-	-	100
Total									800	

3rd YEAR: SEMESTER – V

Sl. No.	Code No.	Subject	Study Scheme (Contact hour/week)			Evaluation Scheme				Total Mark
						Theory		Practical		
			L	T	P	Exam	Sess	Ex/Viva	Sess	
1	Co-501	Data Base Management System	3	-	4	28/70	15/30	12/25	13/25	150
2	Co-502	GUI Programming Lab	-	1	4	-	-	25/50	25/50	100
3	Co-503	Computer Maintenance	3	-	4	14/35	8/15	25/50	25/50	150
4	Co-504	Computer Communication & Networking	3	-	-	28/70	15/30	-	-	100
5	Co-505	Operating System	3	-	4	28/70	15/30	12/25	13/25	150
6	Co-506	Object Oriented Methodology	3	1	5	28/70	15/30	12/25	13/25	150
Total									800	

3rd YEAR: SEMESTER – VI

Sl. No.	Code No.	Subject	Study Scheme (Contact hour/week)			Evaluation Scheme				Total Mark
						Theory		Practical		
			L	T	P	Exam	Sess	Ex/Viva	Sess	
1	Hu-601	Industrial Management & Entrepreneurship	3	-	-	28/70	15/30	-	-	100
2	Co-601	Business Data Processing	3	-	4	28/70	15/30	12/25	13/25	150
3	Co-602	Internet & Web Technology	3	-	6	28/70	15/30	12/25	13/25	150
4	Co-603	Software Engineering	3	-	-	28/70	15/30	-	-	100
5	Co-610	Project, Seminar, General Viva	-	10	-	-	-	25/50	50/100, 25/50	200

ELECTIVE (ANY ONE)

6	Co-604	Parallel Processing	3	-	-	28/70	15/30			100
7	Co-605	VLSI & Embedded System	3	-	-	28/70	15/30			100
8	Co-606	Graph Theory & Combinatorics	3	-	-	28/70	15/30			100
9	Co-607	Optimization Technique	3	-	-	28/70	15/30			100
Total										800

7.3 CONTROL AND INSTRUMENTATION

2nd YEAR: SEMESTER- III

Sl. No.	Code No	Subject	Contact hours per week			Evaluation Scheme				Total Marks
			L	T	P	Theory		Practical		
						Exam	Sess.	Ex/Viva	Sess.	
1	Co-301	Computer Application	2	0	6	28/70	15/30	12/25	13/25	150
2	Hu-302	Engineering Economics & Accountancy	3	1	0	28/70	15/30			100
3	Sc-303	Mathematics-III	3	2	0	28/70	15/30			100
4	CAI-301	Principles of Electrical & Electronics Engineering	4	0	2	28/70	15/30	12/25	13/25	150
5	CAI-302	Computer Programming with C/C++	3	0	4	28/70	15/30	12/25	13/25	150
6.	CAI-303	Digital Circuits	3	1	2	28/70	15/30	12/25	13/25	150
Total										800

2nd YEAR: SEMESTER - IV

Sl. No.	Code No	Subject	Contact hours per week			Evaluation Scheme				Total Marks
			L	T	P	Theory		Practical		
						Exam	Sess.	Ex/Viva	Sess.	
1	CAI-401	Basic Electrical Circuits	3	0	2	28/70	15/30	12/25	13/25	150
2	CAI-402	Electrical Machines & Control	3	0	2	28/70	15/30	12/25	13/25	150
3	CAI-403	Instrumentation & Process Control	3	0	2	28/70	15/30	12/25	13/25	150
4.	CAI-404	Electronics Circuits & Devices-I	3	1	2	28/70	15/30	12/25	13/25	150
5	CAI-405	Electronic Components & Materials	3	0	0	28/70	15/30			100
Total										700

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3rd YEAR: SEMESTER – V

Sl. No.	Code No	Subject	Contact hours per week			Evaluation Scheme				Total Marks
						Theory		Practical		
			L	T	P	Exam	Sess.	Ex/Viva	Sess.	
1	CAI-501	Control Systems	3	1	2	28/70	15/30	12/25	13/25	150
2	CAI-502	Generation, Transmission & Distribution of Power	3	1	0	28/70	15/30			100
3	CAI-503	Principles of Instrumentation	3	0	2	28/70	15/30	12/25	13/25	150
4.	CAI-504	Power Electronics	3	0	2	28/70	15/30	12/25	13/25	150
5	CAI-505	Microprocessors & Applications	3	0	2	28/70	15/30	12/25	13/25	150
6	CAI-506	Electronics Circuits & Devices-II	3	1	2	28/70	15/30	12/25	13/25	150
Total									850	

3rd YEAR: SEMESTER – VI

Sl. No.	Code No	Subject	Contact hours per week			Evaluation Scheme				Total Marks
						Theory		Practical		
			L	T	P	Exam	Sess.	Ex/Viva	Sess.	
1	Hu-601	Industrial Management & Entrepreneurship	3	0	0	28/70	15/30			100
2	CAI-601	Biomedical Instrumentation	3	0	2	28/70	15/30	12/25	13/25	150
3	CAI-602	Transducers and Signal Conditioning	3	0	2	28/70	15/30	12/25	13/25	150
4.	CAI-603	Substation, Switchgear & Protection	3	0	0	28/70	15/30			100
5	CAI-61*	Elective (Any one from the following)								
	CAI-611	Telematics & Satellite Communication	3	1	0	28/70	15/30			100
	CAI-612	Industrial Instrumentation	3	1	0	28/70	15/30			100
6	CAI-699	Project, Seminar	0	0	10			25/50	50/100 25/50	200
Total									800	

7.4 FOOD PROCESSING TECHNOLOGY

2nd YEAR: SEMESTER – III

Sl. No.	Code No	Subject	Contact hours per week			Evaluation Scheme				Total Marks
						Theory		Practical		
			L	T	P	Exam	Sess.	Ex/Viva	Sess.	
1	Co-301	Computer Application	2	0	6	28/70	15/30	12/25	13/25	150
2	Hu-302	Engineering Economics & Accountancy	3	1	0	28/70	15/30			100
3	Sc-303	Mathematics-III	3	2	0	28/70	15/30			100
4	BES-304	Applied Mechanics	3	0	0	28/70	15/30			100
5	FPT-301	Introduction to Food Processing Technology	4	0	2	28/70	15/30	12/25	13/25	150
6	FPT-302	Elements of Food Engineering – I	4	0	2	28/70	15/30	12/25	13/25	150
Total									750	

2nd YEAR: SEMESTER – IV

Sl. No.	Code No	Subject	Contact hours per week			Evaluation Scheme				Total Marks
						Theory		Practical		
			L	T	P	Exam	Sess.	Ex/Viva	Sess.	
1	BES-402	Strength of Materials	3	0	0	28/70	15/30			100
2	CAI-403	Instrumentation & Process Control	3	0	2	28/70	15/30	12/25	13/25	150
3	CAI-406	Computer Programming with C/C++	3	0	4	28/70	15/30	12/25	13/25	150
4	FPT-401	Elements of Food Engineering-II	3	0	2	28/70	15/30	12/25	13/25	150
5	FPT-402	Servicing & Maintenance of Food Machineries	2	0	0	28/70	15/30			100
6	FPT-403	Basics of Food Chemistry	3	0	2	28/70	15/30	12/25	13/25	150
Total									800	

3rd YEAR: SEMESTER – V

Sl. No.	Code No	Subject	Contact hours per week			Evaluation Scheme				Total Marks
						Theory		Practical		
			L	T	P	Exam	Sess.	Ex/Viva	Sess.	
1	FPT-501	Introduction to Food Microbiology, Biochemistry and Biotechnology	3	0	2	28/70	15/30	12/25	13/25	150
2	FPT-502	Food Engineering Operations – I	3	0	2	28/70	15/30	12/25	13/25	150
3	FPT-503	Food Product Technology – I	3	0	2	28/70	15/30	12/25	13/25	150
4	FPT-504	Food Storage and Packaging	3	0	2	28/70	15/30	12/25	13/25	150
5	FPT-505	Food Analysis for Quality Testing & Evaluation	3	0	2	28/70	15/30	12/25	13/25	150
6.	FPT-599	Industrial Training (Audit course)							25/50	50
Total										800

3rd YEAR: SEMESTER – VI

Sl. No.	Code No	Subject	Contact hours per week			Evaluation Scheme				Total Marks
						Theory		Practical		
			L	T	P	Exam	Sess.	Ex/Viva	Sess.	
1	Hu-601	Industrial Management & Entrepreneurship	3	0	0	28/70	15/30			100
2	FPT-601	Food Engineering Operations – II	3	0	2	28/70	15/30	12/25	13/25	150
3	FPT-602	Food Product Technology – II	4	0	2	28/70	15/30	12/25	13/25	150
4	FPT-603	Tea, Coffee and Cocoa Processing	3	0	2	28/70	15/30	12/25	13/25	150
5.	FPT-699	Project	0	0	10			25/50	50/100 25/50	200
6	FPT-61*	Elective (Any one from the following)	3	0	2	28/70	15/30	12/25	13/25	150
		FPT-611: Dairy Technology & Engineering								
		FPT-612: Fruits and Vegetables Processing								
		FPT-613: Cereals, Pulses and Oilseeds Processing								
		FPT-614: Fermented & Non-Fermented Beverages								
		FPT-615: Bakery & Confectionery Technology								
Total										900

7.6 ANIMATION AND MULTIMEDIA TECHNOLOGY

2nd YEAR: SEMESTER – III

Sl. No.	Code No	Subject	Contact hours per week			Evaluation Scheme				Total Marks
						Theory		Practical		
			L	T	P	Exam	Sess.	Ex/Vi va	Sess.	
1	Co-301	Computer Application	2	0	6	28/70	15/30	12/25	13/25	150
2	Hu-302	Engineering Economics & Accountancy	3	1	0	28/70	15/30			100
3	Sc-303	Mathematics-III	3	2	0	28/70	15/30			100
4.	IT-301	Information Technology	3	1	0	28/70	15/30			100
5	AMT-301	Multimedia Systems & Technology	4	0	2	28/70	15/30	12/25	13/25	150
6	AMT-302	Introduction to Animation	3	1	0	28/70	15/30			100
Total									700	

2nd YEAR: SEMESTER – IV

Sl. No.	Code No	Subject	Contact hours per week			Evaluation Scheme				Total Marks
						Theory		Practical		
			L	T	P	Exam	Sess.	Ex/Viva	Sess.	
1	AMT-401	2D & Flash Animation	2	0	6	28/70	15/30	12/25	13/25	150
2	AMT-402	Web Designing	2	0	6	28/70	15/30	12/25	13/25	150
3	AMT-403	3D Modelling	2	0	6	28/70	15/30	12/25	13/25	150
4	AMT-404	Texturing	2	0	6	28/70	15/30	12/25	13/25	150
5	AMT-405	Rigging	2	0	6	28/70	15/30	12/25	13/25	150
Total									750	

3rd YEAR: SEMESTER – V

Sl. No.	Code No	Subject	Contact hours per week			Evaluation Scheme				Total Marks
						Theory		Practical		
			L	T	P	Exam	Sess.	Ex/Viva	Sess.	
1	AMT-501	3D Animation	2	0	6	28/70	15/30	12/25	13/25	150
2	AMT-502	CG Lighting	2	0	6	28/70	15/30	12/25	13/25	150
3	AMT-503	Compositing	2	0	6	28/70	15/30	12/25	13/25	150
4	AMT-504	Visual Effects	2	0	6	28/70	15/30	12/25	13/25	150
5	AMT-505	Audio & Video Editing	2	0	6	28/70	15/30	12/25	13/25	150
6	AMT-599	Minor Project	0	0	6	-	-	25/50	25/50	100
Total									850	

3rd YEAR: SEMESTER – VI

Sl. No.	Code No	Subject	Contact hours per week			Evaluation Scheme				Total Marks
						Theory		Practical		
			L	T	P	Exam	Sess.	Ex/Viva	Sess.	
1	Hu-601	Industrial Management & Entrepreneurship	3	0	0	28/70	15/30			100
2	CAI-605	Computer Programming with C/C++	3	0	4	28/70	15/30	12/25	13/25	150
3	AMT-60_	Specialization-I (Any one from the following)	2	0	8	28/70	15/30	12/25	13/25	150
		AM-601: Modeling								
		AM-603: Rigging								
		AM-605: CG Lighting								
		AM-606: Visual Effects								
4	AM-60_	Specialization-II (Any one from the following)	2	0	8	28/70	15/30	12/25	13/25	150
		AM-602: Texturing								
		AM-604: 3D Animation								
		AM-607: Compositing								
5	AM-611	Seminar & Presentation on Specialization-I & II	-	-	-	-	-	25/50	25/50	100
6	AMT-699	Major Project, Seminar etc.	0	0	10			25/50	50/100	150
Total										800

7.7 CONSTRUCTION TECHNOLOGY

2nd YEAR: SEMESTER – III

Sl. No.	Code No	Subject	Contact hours per week			Evaluation Scheme				Total Marks
						Theory		Practical		
			L	T	P	Exam	Sess.	Ex/Viva	Sess.	
1	Co-301	Computer Application	2	0	6	28/70	15/30	12/25	13/25	150
2	Hu-302	Engineering Economics & Accountancy	3	1	0	28/70	15/30			100
3	Sc-303	Mathematics-III	3	2	0	28/70	15/30			100
4	CT-301	Construction Materials	4	0	2	28/70	15/30			100
5	CT-302	Surveying-I	4	0	2	28/70	15/30	12/25	13/25	150
6.	CT-303	Strength of Materials	4	0	2	28/70	15/30			100
Total										700

2nd YEAR: SEMESTER – IV

Sl. No.	Code No	Subject	Contact hours per week			Evaluation Scheme				Total Marks
						Theory		Practical		
			L	T	P	Exam	Sess.	Ex/Viva	Sess.	
1	CT-401	Structural Analysis	4	1	0	28/70	15/30			100
2	CT-402	Water Supply & Sanitary Installation	4	0	0	28/70	15/30			100
3	CT-403	Fluid Mechanics	4	0	0	28/70	15/30			100
4	CT-404	Surveying-II	3	0	2	28/70	15/30	12/25	13/25	150
5	CT-405	Building Construction & Maintenance and Civil Engg. Drawing	4	0	4	28/70	15/30	25/50	25/50	200
6	CAI-406	Computer Programming with C/C++	3	0	4	28/70	15/50	12/25	13/25	150
Total										800

3rd YEAR: SEMESTER – V

Sl. No.	Code No	Subject	Contact hours per week			Evaluation Scheme				Total Marks
						Theory		Practical		
			L	T	P	Exam	Sess.	Exam/Viva	Sess.	
1	CT-501	Construction Technology	3	1	2	28/70	15/30	12/25	13/25	150
2	CT-502	Concrete Technology	3	1	2	28/70	15/30	12/25	13/25	150
3	CT-503	Geotechnical Engineering	4	0	2	28/70	15/30	12/25	13/25	150
4	CT-504	Design of RCC Structure	4	0	0	28/70	15/30			100
5	CT-505	Transportation Engineering	4	0	2	28/70	15/30	12/25	13/25	150
6.	CT-506	Environmental Engineering	3	0	0	28/70	15/30			100
Total										800

3rd YEAR: SEMESTER – VI

Sl. No.	Code No	Subject	Contact hours per week			Evaluation Scheme				Total Marks
						Theory		Practical		
			L	T	P	Exam	Sess.	Exam/Viva	Sess.	
1	Hu-601	Industrial Management & Entrepreneurship	3	0	0	28/70	15/30			100
2	CT-601	Estimation & Costing	4	0	2	28/70	15/30	12/25	13/25	150
3	CT-602	Design of Steel Structures	4	1	0	28/70	15/30			100
4	CT-603	Construction & Project Management	4	1	0	28/70	15/30			100
5	CT-699	Project	0	0	10			25/50	50/100 25/50	200
6	CT-61*	Elective (Any one from the following)	4	0	2	28/70	15/30	12/25	13/25	150
		CT-611: Construction Methods & Machinery								
		CT-612: Water Resource Engineering								
		CT-613: Computational Methods in Civil Engg.								
Total										800

8. DEGREE (B. TECH) COURSE STRUCTURE :

1st YEAR: 1st SEMESTER (JULY-DEC) : COMMON TO ALL BRANCHES

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	MA101	Engineering Mathematics –I	3	1	0	4	4
2.	PH101	Engineering Physics	3	1	0	4	4
3.	CS101	Introduction to Computer Programming	3	1	0	4	4
4.	HU101	Communication Skills	3	1	0	4	4
5.	ES101	Environmental Engineering	3	1	0	4	4
Total of Theory							20
Practicals							
1.	PH171	Physics Lab	0	0	3	3	2
2.	CE171	Engineering Graphics Lab	0	1	3	4	2
3.	WS171	Workshop Practice –I	0	1	3	3	3
4.	CS171	Computing Lab	0	0	3	3	2
Total of Practical							09

1st YEAR: 2nd SEMESTER (JAN-JUNE) : COMMON TO ALL BRANCHES

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	MA201	Engineering Mathematics –II	3	1	0	4	4
2.	CY201	Engineering Chemistry	3	1	0	4	4
3.	EE201	Basic Electrical Engineering	3	1	0	4	4
4.	ME201	Engineering Mechanics	3	1	0	4	4
5.	EC201	Basic Electronics	3	1	0	4	4
6.	HU201	Professional Ethics and Human value	2	0	0	2	2
Total of Theory							22
B. Practical							
1.	CY271	Engineering Chemistry Lab	0	0	3	3	2
2.	WS271	Workshop Practice –II	0	1	3	3	3
3.	EE271	Basic Electrical and Electronics Lab	0	0	3	3	2
Total of Practical							07

8.1 ELECTRONICS AND COMMUNICATIONS ENGINEERING

2nd YEAR: 3rd SEMESTER (JULY-DEC)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	EC301	Electronics Devices and circuits	3	1	0	4	4
2.	EC302	Linear Systems and Signals	3	1	0	4	4
3.	MA301	Engineering Mathematics – III	3	1	0	4	4
4.	IE301	Network Theory	3	1	0	4	4
5.	CS304	Data Structure and Algorithms	3	1	0	4	4
Total of Theory							20
B. Practicals							
1.	EC371	Electronics Circuits & Devices Lab	0	0	3	3	2
2.	IE371	Circuit Simulation Lab	0	0	3	3	2
3.	EC372	Linear Systems & Signals lab	0	0	3	3	2
4.	HU371	Language Lab	0	0	3	3	2
5.	CS374	Data Structure Lab	0	0	3	3	2
Total of Practicals							10

2nd YEAR: 4th SEMESTER (JAN-JUNE)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	HU401	Engineering Economics	3	0	0	3	3
2.	EC401	Digital electronics	3	1	0	4	4
3.	EC402	Analog communication	3	1	0	4	4
4.	EC403	Linear Integrated Circuits	3	1	0	4	4
5.	MA401	Numerical Methods and C Programming	3	1	0	4	4
Total of Theory							19
B. Practicals							
1.	EC471	Digital electronics Lab	0	0	3	3	2
2.	EC472	Analog communication lab	0	0	3	3	2
3.	EC473	Linear Integrated Circuits Lab	0	0	3	3	2
4.	MA471	Numerical Methods Lab	0	0	3	3	2
Total of Practicals							06

3rd YEAR: 5th SEMESTER (JULY-DEC)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	HU501	Industrial management and entrepreneurship	3	0	0	3	3
2.	EC501	Electromagnetic Waves	3	1	0	4	4
3.	EC502	Digital Communications	3	1	0	4	4
4.	IE501	Microprocessor and Interfacing	3	1	0	4	4
5.	IE506	Control Theory	3	1	0	4	4
Total of Theory							19
B. Practicals							
1.	IE571	Microprocessor Lab	0	0	3	2	2
2.	IE573	Control System Lab	0	0	3	2	2
3.	EC573	Digital Communication	0	0	3	2	2
Total of Practicals							6

3rd YEAR: 6th SEMESTER (JAN-JUNE)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	HU601	Professional Communication	2	0	0	2	2
2.	EC601	Microwave Engineering	3	1	0	4	4
3.	EC602	VLSI Design	3	1	0	4	4
4.	EC603	Digital Signal Processing	3	1	0	4	4
5.	EC604	Communication Networks	3	1	0	4	4
6.	EC61*	Elective	3	0	0	3	3
Total of Theory							21
B. Practical							
1.	EC672	VLSI Design Lab	0	0	3	2	2
2.	EC673	Digital signal processing lab	0	0	3	2	2
3.	EC671	Microwave lab	0	0	3	2	2
Total of Practical							6

4th YEAR: 7th SEMESTER (JULY-DEC)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	EC71 *	Elective	3	0	0	3	3
2.	EC71 *	Elective	3	0	0	3	3
3.	EC71 *	Elective	3	0	0	3	3
4.	EC71 *	Elective	3	0	0	3	3
5.	EC71 *	Elective	3	0	0	3	3
Total of Theory							15
1.	EC791	Major Project –I	0	0	12	12	8
2.	EC792	Report and Presentation on Practical Training – II	-	-	-	-	3
3.	EC770	Seminar	0	0	3	3	2
Total of Practicals							13

4th YEAR: 8th SEMESTER (JAN-JUNE)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	EC81 *	Elective	3	0	0	3	3
2.	EC81 *	Elective	3	0	0	3	3
3.	EC81 *	Elective	3	0	0	3	3
Total of Theory							9
B. Practicals							
1.	EC891	Major project –II	0	0	18	18	12
2.	EC892	Project Defense	-	-	-	-	4
3.	EC893	Comprehensive Viva Voce	-	-	-	-	8
Total of Practicals							24

List of Elective Papers

Sl.	Code	Subjects	L	T	P	Total	Credit
For VI Semester							
1	EC615	Mobile Communication	3	0	0	3	3
2	EC616	Embedded System	3	0	0	3	3
3	IE615	Power Electronics	3	0	0	3	3
For VII Semester							
1	EC710	Antenna And Wave Propagation	3	0	0	3	3
2	EC711	Cryptography	3	0	0	3	3
3	EC712	Spread Spectrum Communications	3	0	0	3	3
4	EC713	Wireless System	3	0	0	3	3
5	EC714	Digital Image Processing	3	0	0	3	3
6	EC715	Biomedical Instrumentation	3	0	0	3	3
7	EC716	Operating System	3	0	0	3	3

For VIII Semester							
1	EC810	Radar And Electronic Navigation Systems	3	0	0	3	3
2	EC811	Artificial Neural Network	3	0	0	3	3
3	EC812	Dsp Procrssors And Architecture	3	0	0	3	3
4	EC813	Database Management Systems	3	0	0	3	3
5	EC814	Satellite Communication	3	0	0	3	3

8.2 COMPUTER SCIENCE AND ENGINEERING

2nd YEAR: 3rd SEMESTER (JULY-DEC)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	CS301	Computer Organization and Architecture	3	0	0	3	3
2.	CS303	Operating System	3	0	0	3	3
3.	MA301	Mathematics-III	3	1	0	4	4
4.	MA302	Discrete Mathematics	3	1	0	4	4
5.	IE301	Network Theory	3	1	0	4	4
6.	CS304	Data structure	3	1	0	4	4
Total of Theory							22
B. Practicals							
1.	CS373	Operating System Lab	0	0	3	3	2
2.	CS374	Data structure Lab	0	0	3	3	2
3.	IE371	Circuit Simulation Lab	0	0	3	3	2
4.	HU371	Language Lab	0	0	3	3	2
Total of Practicals							8

2nd YEAR: 4th SEMESTER (JAN-JUNE)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	HU401	Engineering Economics	3	0	0	3	3
2.	EC401	Digital Electronics	3	1	0	4	4
3.	CS401	Database Management systems	3	1	0	4	4
4.	CS402	Computer networks	3	1	0	4	4
5.	MA401	Numerical Methods & Computer Programming	3	1	0	4	4
Total of Theory							19
B. Practicals							
1.	CS471	Database Management systems Lab	0	0	2	2	2
2.	CS472	Networks lab	0	0	2	2	2
3.	EC471	Digital Electronics Lab	0	0	2	2	2
4.	MA471	NMCP Lab	0	0	2	2	2
Total of Practicals							8

3rd YEAR: 5th SEMESTER (JULY-DEC)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	HU501	Industrial Management and Entrepreneurship	3	0	0	3	3
2.	IE501	Microprocessor and Interfacing	3	1	0	4	4
3.	CS501	System programming	3	0	0	3	3
4.	CS502	Theory of Computation	3	0	0	3	3
5.	CS503	Design and analysis of algorithm	3	0	0	3	3
6.	CS51*	Elective	3	0	0	3	3
Total of Theory							19
B. Practicals							
1.	IE571	Microprocessor Lab	0	0	2	2	2
2.	CS591	Mini Project	0	0	3	3	2
3.	CS571	Unix programming lab	0	0	2	2	2
Total of Practicals							6

3rd YEAR: 6th SEMESTER (JAN-JUNE)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	HU601	Professional Communication	2	0	0	2	2
2.	CS601	Compiler Design	3	1	0	4	4
3.	CS602	Software Engineering	3	1	0	4	4
4.	CS603	Information Security	3	1	0	4	4
5.	CS604	Computer Graphics	3	0	0	3	3
Total of Theory							17
B. Practical							
1.	CS672	Compiler Design Lab	0	0	2	2	2
2.	CS674	Computer Graphics Lab	0	0	2	2	2
3.	CS673	Information Security Lab	0	0	2	2	2
Total of Practical							6

4th YEAR: 7th SEMESTER (JULY-DEC)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	CS71*	Elective	3	0	0	3	3
2.	CS71*	Elective	3	0	0	3	3
3.	CS71*	Elective	3	0	0	3	3
4.	CS71*	Elective	3	0	0	3	3
Total of Theory							12

A. Sessionals							
1.	CS791	Major Project –I	0	0	12	12	8
2.	CS792	Report and Presentation on Practical Training – II	-	-	-	-	3
3.	CS770	Seminar	0	0	3	3	2
Total of Practicals							13

4th YEAR: 8th SEMESTER (JAN-JUNE)

Theory							
	Code	Subjects	Contacts (periods per week)				Credit points
			L	T	P	Total	
1.	CS81*	Elective	3	0	0	3	3
2.	CS81*	Elective	3	0	0	3	3
3.	CS81*	Elective	3	0	0	3	3
Total of Theory							9
Practicals							
1.	CS891	Major project -II	0	0	18	18	12
2.	CS892	Project Defense	-	-	-	-	4
3.	CS893	Comprehensive Viva Voce	-	-	-	-	8
Total of Practicals							24

List of Elective Courses in Computer Science and Engineering

	Code	Subjects	L	T	P	Total	Credit
ELECTIVE COURSES FOR V SEMESTER							
1	CS511	Object Oriented Analysis And Design	3	0	0	3	3
2	CS512	Multimedia	3	0	0	3	3
3	CS513	Neural Computing	3	0	0	3	3
4	CS514	Discrete Structures	3	0	0	3	3
ELECTIVE COURSES FOR VII SEMESTER							
1	CS711	Artificial Intelligence	3	0	0	3	3
2	CS712	Mobile Computing	3	0	0	3	3
3	CS713	Advanced Databases	3	0	0	3	3
4	CS714	Parallel Computing	3	0	0	3	3
5	CS715	Digital Speech & Image Processing	3	0	0	3	3
6	CS716	Pattern Recognition	3	0	0	3	3
7	CS717	Cryptography And Network Security	3	0	0	3	3
8	CS718	Graph Theory	3	0	0	3	3
ELECTIVE COURSES FOR VIII SEMESTER							
1	CS811	ATM Networks	3	0	0	3	3
2	CS812	Robotics	3	0	0	3	3
3	CS813	High Performance Microprocessors	3	0	0	3	3
4	CS814	C# And .Net Frame Work	3	0	0	3	3
5	CS815	TCP / IP – Design And Implementation	3	0	0	3	3
6	CS816	Software Testing	3	0	0	3	3
7	CS817	Embedded Systems	3	0	0	3	3

8.3 INSTRUMENTATION ENGINEERING

2nd YEAR: 3rd SEMESTER (JULY-DEC)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Tota	
1.	EC301	Electronic Devices and Circuits	3	1	0	4	4
2.	IE301	Network Theory	3	1	0	4	4
3.	IE302	Fundamentals of Instrumentation	3	1	0	4	4
4.	IE303	Electrical Engineering Materials and Devices	3	1	0	4	4
5.	MA301	Mathematics-III	3	1	0	4	4
6.	ME301	Basic Thermodynamics	3	1	0	4	4
Total of Theory							24
B. Practicals							
1.	EC371	Basic Electronics Lab	0	0	3	2	2
2.	IE371	Circuit Simulation Lab	0	0	3	2	2
3.	HU370	Language Lab	0	0	2	2	2
Total of Practicals							6

2nd YEAR: 4th SEMESTER (JAN-JUNE)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Tota	
1.	HU401	Engineering Economics	3	0	0	3	3
2.	EC401	Digital Electronics	3	1	0	4	4
3.	IE401	Electrical Machines	3	1	0	4	4
4.	IE402	Electrical Measurements and Instruments	3	0	0	3	3
5.	IE403	Linear Systems and Signals	3	1	0	4	4
6.	MA401	Numerical Methods & Computer Programming	3	1	0	4	4
Total of Theory							22
B. Practicals							
1.	IE471	Electrical Machines Lab	0	0	3	2	2
2.	IE472	Instrumentation and Measurement Lab	0	0	3	2	2
3.	EC471	Digital Electronics Lab	0	0	3	2	2
4.	MA471	NMCP Lab	0	0	3	2	2
Total of Practicals							8

3rd YEAR: 5th SEMESTER (JULY-DEC)

A. Theory							
	Code	Subjects	Contacts				Credit points
			L	T	P	Total	
1.	HU501	Industrial Management and Entrepreneurship	3	0	0	3	3
2.	IE501	Microprocessor and Interfacing	3	1	0	4	4
3.	IE502	Transducer Engineering	3	1	0	4	4
4.	IE503	Control System-I	3	1	0	4	4
5.	IE504	Electronic Instrumentation	3	1	0	4	4
6.	IE505	Analytical Instrumentation	3	1	0	4	4
Total of Theory							23
B. Practicals							
1.	IE571	Microprocessor Lab	0	0	3	2	2
2.	IE573	Control Systems Lab	0	0	3	2	2
3.	IE574	Electronic Instrumentation lab	0	0	3	2	2
Total of Practicals							6

3rd YEAR: 6th SEMESTER (JAN-JUNE)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	HU601	Professional Communication	2	0	0	2	2
2.	IE601	Process Control	3	1	0	4	4
3.	IE602	Power Electronics	3	1	0	4	4
4.	IE603	Communication Engineering	3	1	0	4	4
5.	IE604	Control System-II	3	0	0	0	3
6.	EC603	Digital Signal Processing	3	1	0	4	4
Total of Theory							21
B. Practical							
1.	IE671	Process Control Lab	0	0	3	2	2
2.	IE672	Power Electronics Lab	0	0	3	2	2
3.	EC673	Digital Signal Processing Lab	0	0	3	2	2
Total of Practical							6

4th YEAR: 7th SEMESTER (JULY-DEC)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	IE701	Industrial Instrumentation	3	1	0	4	4
2.	IE702	Instrumentation System Components	3	1	0	4	4
3.	IE703	Fiber Optic and Laser Instruments	3	1	0	4	4
4.	IE71*	Elective-I	3	0	0	3	3
5.	IE71*	Elective-II	3	0	0	3	3
Total of Theory							18

Practicals							
1.	IE791	Major Project –I	0	0	12	12	8
2.	IE792	Report and Presentation on Practical Training – II	-	-	-	-	3
3.	IE793	Seminar	0	0	3	3	2
Total of Practical							13

4th YEAR: 8th SEMESTER (JAN-JUNE)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	IE801	Biomedical Instrumentation	3	0	0	3	3
2.	IE81*	Elective	3	0	0	3	3
3.	IE81*	Elective	3	0	0	3	3
Total of Theory							9
Practicals							
1.	IE891	Major Project –II	0	0	18	18	12
2.	IE892	Project Defense	-	-	-	-	4
3.	IE893	Comprehensive Viva Voce	-	-	-	-	8
Total of Practical							24

List of Elective Papers

Sl.	Code	Subjects	L	T	P	Total	Credit
List of Elective Papers for VII Semester							
1	IE710	Instrumentation in Petrochemical Industries	3	0	0	3	3
2	IE711	Fluidic Power and Control	3	0	0	3	3
3	IE712	Computer Control of Process	3	0	0	3	3
4	IE713	Digital Image Processing	3	0	0	3	3
List of Elective Papers for VIII Semester							
1	IE810	Virtual Instrumentation	3	0	0	3	3
2	IE811	Operation Research	3	0	0	3	3
3	IE812	Instrumentation & Control in Paper Industry	3	0	0	3	3
4	IE813	Instrumentation in Aerospace & Navigation	3	0	0	3	3

8.4 FOOD PROCESSING TECHNOLOGY

2ND YEAR: 3RD SEMESTER (JULY-DEC)

A. Theory							
	Code	Subjects	Contacts				Credit Points
			L	T	P	Total	
1.	FPT30	Basic Microbiology	3	0	0	3	3
2.	FPT30	Principles of Food Processing and Preservation	3	0	0	3	3
3.	ME301	Basic Thermodynamics	3	1	0	4	4
4.	FPT30	Fluid Mechanics	3	1	0	4	4
5.	FPT30	Food Chemistry and Nutrition	3	0	0	3	3
6.	MA301	Mathematics-III	3	1	0	4	4
Total of Theory							21
B. Practicals							
1.	FPT37	Microbiology Lab	0	0	3	3	2
2.	FPT37	Food Processing Lab	0	0	3	3	2
3.	FPT37	Food Chemistry Lab	0	0	3	3	2
4.	HU371	Language Lab	0	0	3	3	2
Total of practicals							8

2ND YEAR: 4TH SEMESTER (JAN-JUNE)

A. Theory							
	Code	Subjects	Contacts				Credit Points
			L	T	P	Total	
1.	HU401	Engineering Economics	3	0	0	3	3
2.	FPT401	Food Process Technology-I (Fruits &	3	0	0	3	3
3.	FPT402	Food Process Technology-II (Cereals & Legume	3	0	0	3	3
4.	FPT403	Transfer Process Engineering	3	1	0	4	4
5.	FPT404	Food Microbiology	3	0	0	3	3
6.	MA401	Numerical Methods and Computer	3	0	0	4	3
Total of theory							20
B. Practicals							
1.	FPT471	Product Technology- I /II Lab	0	0	3	3	2
2.	FPT472	Transfer Process Engineering Lab	0	0	2	2	2
3.	FPT473	Food Microbiology Lab	0	0	3	3	2
4.	MA471	Numerical Methods & Computer Programming	0	0	2	2	2
Total of practicals							8

3RD YEAR: 5TH SEMESTER (JULY-DEC)

A. Theory							
	Code	Subjects	Contacts				Credit Points
			L	T	P	Total	
1.	FPT501	Food Industry Waste Management	4	0	0	4	4
2.	FPT502	Food Product Technology-III (Milk and Milk	3	0	0	3	3
3.	FPT503	Food Process Engineering	3	1	0	4	4
4.	FPT504	Mechanical Design of Process Equipment	3	0	0	3	3
5.	HU501	Industrial Management and Entrepreneurship	3	0	0	3	3
Total of Theory							17
B. Practicals							
1.	FPT571	Product Technology-III Lab	0	0	3	3	2
2.	FPT572	Food Engineering Lab	0	0	3	3	2
3.	FPT573	Process Equipment Design	0	1	4	5	3
Total of practicals							7

3RD YEAR: 6TH SEMESTER (JAN-JUNE)

A. Theory							
	Code	Subjects	Contacts				Credit Points
			L	T	P	Total	
1.	HU601	Professional Communication	2	0	0	2	2
2.	FPT601	Food Packaging Technology	3	0	0	3	3
3.	FPT602	Food Analysis, Quality Control and	3	0	0	3	3
4.	FPT603	Biochemistry and Biotechnology	4	0	0	4	4
5.	FPT61*	Elective	3	0	0	3	3
6.	IE604	Process Instrumentation and Control	3	1	0	4	4
Total of theory							19
B. Practicals							
1.	FPT671	Product Technology- IV/V Lab	0	0	3	3	2
2.	FPT672	Food Packaging Technology Lab	0	0	2	2	1
3.	FPT673	Food Analysis and Quality Control Lab	0	0	3	3	2
4.	FPT674	Biochemistry and Biotechnology Lab	0	0	2	2	1
5.	IE671	Instrumentation Lab	0	0	2	2	1
Total of practicals							7

4TH YEAR: 7TH SEMESTER (JULY-DEC)

A. Theory							
	Code	Subjects	Contacts				Credit Points
			L	T	P	Total	
1.	FPT701	Food Hygiene and Plant Sanitation	3	0	0	3	3
2.	FPT702	Food Process Equipment Design	3	0	0	3	3
3.	FPT703	Food Additives and Legislation	3	0	0	3	3
4.	FPT71*	Elective-I	3	0	0	3	3
5.	FPT71*	Elective-II	3	0	0	3	3
Total of Theory							15
B. Practicals							
1.	FPT791	Major Project-I	0	0	14	14	8
2.	FPT792	Report and Presentation on Practical Training-II	-	-	-	-	3
3.	FPT770	Seminar	0	0	3	3	2
Total of practicals							13

4TH YEAR: 8TH SEMESTER (JAN-JUNE)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	FPT801	Plant Design and Project Engineering	3	0	0	3	3
2.	FPT81*	Elective-I	3	0	0	3	3
3.	FPT81*	Elective-II	3	0	0	3	3
Total of Theory							9
B. Practicals							
1.	FPT891	Major Project-II	0	0	18	18	12
2.	FPT892	Project Defense	-	-	-	-	4
3.	FPT893	Comprehensive Viva Voce	-	-	-	-	8
Total of practicals							24

List of Elective Courses in Food Processing Technology

	Code	Subjects	L	T	P	Total	Credit
1	FPT611	Food product Technology-IV (Bakery,	3	0	0	3	3
2	FPT612	Food Product Technology-V (Oils & Fats	3	0	0	3	3
3	FPT711	Industrial Microbiology and Enzyme	3	0	0	3	3
4	FPT712	Fermentation Technology	3	0	0	3	3
5	HU711	Marketing and Sales Management	3	0	0	3	3
6	EC718	Applied Electronics	3	0	0	3	3
7	FPT713	Refrigeration and Air conditioning	3	0	0	3	3
8	FPT811	Modeling and Simulation of Food Processes	3	0	0	3	3
9	FPT812	Concentration and Dehydration of Foods	3	0	0	3	3
10	FPT813	Food Product Technology – VI (Fish, Meat &	3	0	0	3	3

11	FPT814	Optimization Techniques in Food Engineering	3	0	0	3	3
12	FPT815	Material Science and Technology	3	0	0	3	3
13	FPT816	Specialty Foods: Nutraceuticals & Functional	3	0	0	3	3
14	FPT817	Renewable Energy Technology	3	0	0	3	3

8.5 CIVIL ENGINEERING

2ND YEAR: 3RD SEMESTER (JULY-DEC)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	CE 301	Surveying-I	3	1	0	4	4
2.	CE 302	Strength of materials	3	1	0	4	4
3.	CE 303	Fluid mechanics	3	1	0	4	4
4.	CE 304	Building materials and construction	3	1	0	4	4
5.	CE 305	Engineering geology	3	0	0	3	3
6.	MA301	Mathematics-III	3	1	0	4	4
Total of Theory							23
B. Practicals							
1.	CE371	Surveying-I	0	0	2	2	2
2.	CE372	Civil Engineering Drawing	0	0	2	2	2
3.	CE373	Material Testing lab	0	0	2	2	2
4.	HU371	Language Lab	0	0	3	3	2
Total of practicals							8

2ND YEAR: 4TH SEMESTER (JAN-JUNE)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	HU401	Engineering Economics	3	0	0	3	3
2.	CE 401	Surveying-II	3	1	0	4	4
3.	CE 402	Structural Analysis-I	3	1	0	4	4
4.	CE 403	Geotechnical Engineering	3	1	0	4	4
5.	CE 404	Environmental Engineering-I	3	1	0	4	4
6.	MA401	Numerical Methods and Computer	3	0	0	3	4
Total of Theory							23
B. Practicals							
1.	CE 471	Surveying-II	0	0	2	2	2
2.	CE 472	Geotechnical Engineering	0	0	2	2	2
3.	CE 473	Environmental Engineering-I	0	0	2	2	2
4.	MA471	Numerical Methods & Computer Programming	0	0	2	2	2
Total of practicals							8

3RD YEAR: 5TH SEMESTER (JULY-DEC)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	CE 501	Design of Structures-I	3	1	0	4	4
2.	CE 502	Transportation Engineering-I	3	1	0	4	4
3.	CE 503	Structural Analysis-II	3	1	0	4	4
4.	CE 504	Concrete Technology	3	1	0	4	4
5.	HU501	Industrial Management and Entrepreneurship	3	0	0	3	3
Total of Theory							19
B. Practicals							
1.	CE 571	Transportation Engineering-I	0	0	2	2	2
2.	CE 572	Concrete Technology	0	0	2	2	2
3.	CE 573	CAD	0	0	2	2	2
4.	CE 574	Survey Camp	0	0	3	3	3
Total of practicals							9

3RD YEAR: 6TH SEMESTER (JAN-JUNE)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	HU601	Professional Communication	2	0	0	2	2
2.	CE 601	Design of Structures-II	3	1	0	4	4
3.	CE 602	Environmental Engineering-II	3	1	0	4	4
4.	CE 603	Transportation Engineering-II	3	1	0	4	4
5.	CE 604	Foundation Engineering	3	1	0	4	4
6.	CE 605	Hydraulic Engineering	3	1	0	4	4
Total of Theory							22
B. Practicals							
1.	CE 671	Environmental Engineering-II	0	0	2	2	2
2.	CE 672	Transportation Engineering-II	0	0	2	2	2
3.	CE 673	Hydraulic Engineering	0	0	2	2	2
Total of practicals							6

4TH YEAR: 7TH SEMESTER (JULY-DEC)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	CE 701	Estimation and Costing	4	1	0	5	5
2.	CE 702	Structural Analysis-III	4	1	0	5	5
3.	CE71 *	Elective-I	3	0	0	3	3
4.	CE71 *	Elective-II	3	0	0	3	3
Total of Theory							16

B. Practical							
1.	CE 791	Major Project-I	0	0	14	14	8
2.	CE 792	Report and Presentation on Practical	-	-	-	-	3
3.	CE770	Seminar	0	0	3	3	2
Total of practicals							13

4TH YEAR: 8TH SEMESTER (JAN-JUNE)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	CE 801	Design of Structures-III	3	1	0	4	4
2.	CE 81*	Elective-I	3	0	0	4	3
3.	CE 81*	Elective-II	3	0	0	4	3
Total of Theory							10
B. Practicals							
1.	CE 891	Major Project-II	0	0	18	18	12
2.	CE 892	Project Defense	-	-	-	-	4
3.	CE 893	Comprehensive Viva Voce	-	-	-	-	8
Total of practicals							24

List of Elective Courses in Civil Engineering (Construction Technology)

	Code	Subjects	Contacts				Credit
			L	T	P	Total	
7th Semester Elective-I (any one)							
1.	CE 711	Hydrology	3	0	0	3	3
2	CE 712	Soil Stabilization and Ground Improvement	3	0	0	3	3
3	CE 713	Highway Construction Practice	3	0	0	3	3
4	CE 714	Open Channel flow	3	0	0	3	3
7th Semester Elective-II (any one)							
1	CE 715	Pavement Analysis and Design	3	0	0	3	3
2	CE716	Irrigation Engineering	3	0	0	3	3
3	CE 717	Design of Water Supply and Treatment	3	0	0	3	3
4	CE 718	Optimization Techniques in Engineering	3	0	0	3	3
8th Semester Elective-I (any one)							
1	CE 811	Traffic Engineering	3	0	0	3	3
2	CE 812	Construction Management	3	0	0	3	3
3	CE 813	Finite Element Analysis	3	0	0	3	3
4	CE 814	Earthquake Resistant Structures	3	0	0	3	3
8th Semester Elective-II (any one)							
1	CE 815	Bridge Engineering	3	0	0	3	3
2	CE 816	Advance Foundation Engineering	3	0	0	3	3
3	CE 817	Geometric Designs of Transportation	3	0	0	3	3
4	CE 818	Environmental Impact Assessments	3	0	0	3	3

8.6 INFORMATION TECHNOLOGY

2nd YEAR: 3rd SEMESTER (JULY-DEC)

A. Theory							
	Code	Subjects	Contacts				Credit points
			L	T	P	Total	
1.	CS301	Computer Organization and Architecture	3	0	0	3	3
2.	MA302	Discrete Mathematics	3	1	0	4	4
3.	CS303	Operating systems	3	0	0	3	3
4.	MA301	Mathematics-III	3	0	0	3	3
5.	IT301	Digital Logic Design	3	1	0	4	4
6.	CS304	Data structure	3	0	0	3	3
Total of Theory							20
B. Practicals							
1.	CS373	Operating System Lab	0	0	2	2	2
2.	CS374	Data structure Lab	0	0	2	2	2
3.	IT371	Logic Design Lab	0	0	3	2	2
4.	HU370	Language Lab	0	0	2	2	2
Total of Practicals							8

2nd YEAR: 4th SEMESTER (JAN-JUNE)

A. Theory							
	Code	Subjects	Contacts				Credit
			L	T	P	Total	
1.	HU401	Engineering Economics	3	0	0	3	3
2.	IT401	Object Oriented Systems	3	0	0	3	3
3.	CS401	Database Management systems	3	1	0	4	4
4.	CS402	Computer Networks	3	1	0	4	4
5.	MA401	Numerical Methods & Computer Programming	3	1	0	4	4
6.	IT402	Web Technology	3	0	0	3	3
Total of Theory							21
B. Practicals							
1.	CS471	Database Management systems Lab	0	0	2	2	2
2.	IT471	OOPS Lab	0	0	2	2	2
3.	MA471	NMCP Lab	0	0	2	2	2
4.	IT472	Web Design Seminar	0	0	2	2	2
Total of Practicals							8

3rd YEAR: 5th SEMESTER (JULY-DEC)

Sl.	Code	Subjects	Contacts				Credit Points
			L	T	P	Total	
A. Theory							
1.	HU501	Industrial Management and Entrepreneurship	3	0	0	3	3
2.	CS502	Theory of Computation	3	1	0	4	4
3.	IT501	E-Commerce	3	0	0	3	3

4.	IT502	ERP	3	1	0	4	4
5.	CS503	Design analysis and algorithm	3	1	0	4	4
6.	IE501	Microprocessor and Interfacing	3	1	0	4	4
Total of Theory							22
B. Practicals							
1.	IE571	Microprocessor Lab	0	0	2	2	2
2.	IT572	Mini Project using Web	0	0	2	2	2
3.	CS573	Algorithms Lab*	0	0	2	2	2
Total of Practicals							6

3rd YEAR: 6th SEMESTER (JAN-JUNE)

	Code	Subjects	Contacts				Credit
			L	T	P	Tota	
A. Theory							
1.	HU601	Professional Communication	2	0	0	2	2
2.	IT601	E-commerce and ERP	3	0	0	3	3
3.	IT602	Computer Graphics And Multimedia	3	0	0	4	4
4.	IT603	Compiler Designer	3	1	0	4	4
5.	IT604	Web Technology	3	1	0	4	4
6.	IT605	Software Engineering	3	0	0	3	3
Total of Theory							20
B. Practicals							
1.	IT671	Computer Graphics Lab	0	0	2	2	2
2.	IT672	Compiler Design Lab	0	0	2	2	2
3.	IT673	Web Technology Lab	0	0	2	2	2
4.	IT674	Mini Project	0	0	2	2	2
Total of Practicals							8

4th YEAR: 7th SEMESTER (JULY-DEC)

	Code	Subjects	Contacts				Credit
			L	T	P	Tota	
A. Theory							
1.	IT701	Data Mining And Data Warehousing	3	0	0	3	3
2.	IT702	Information Security And Cyber Laws	3	1	0	4	4
3.	IT71*	Elective-I	3	1	0	3	3
4.	IT72*	Elective-II	3	0	0	3	3
Total of Theory							13
B. Practicals							
1.	IT791	Major Project –I	0	0	1	12	8
2.	IT792	Report and Presentation on Practical Training – II	-	-	-	-	3
3.	IT770	Seminar	0	0	2	2	2
4.	IT772	Information Security Lab	0	0	2	2	2
Total of Practicals							15

4th YEAR: 8th SEMESTER (JAN-JUNE)

	Code	Subjects	Contacts				Credit
			L	T	P	Total	
A. Theory							
1.	IT81*	Elective-IV	3	0	0	3	3
2.	IT81*	Elective-IV	3	0	0	3	3
3.	IT81*	Elective-V	3	0	0	3	3
Total of Theory							9
B. Practicals							
1.	IT891	Major project –II	0	0	1	18	12
2.	IT892	Project Defense	-	-	-	-	4
3.	IT893	Comprehensive Viva Voce	-	-	-	-	8
Total of Practicals							24

List of Elective Courses in Information Technology

	Code	Subjects	L	T	P	Total	Credit
1	Elective I						
	IT711	Software Quality Engineering	3	1	0	4	4
	IT712	Distributed System	3	1	0	4	4
	IT713	Image Processing and Pattern Recognition	3	1	0	4	4
	IT714	Advanced Computer Architecture					
2	Elective II						
	IT715	Artificial Intelligence	3	1	0	4	4
	IT716	Parallel Computing	3	1	0	4	4
	IT717	Graph Theory	3	1	0	4	4
	IT718	Bioinformatics	3	1	0	4	4
3	Elective III						
	IT811	Cryptography and Network Security	3	1	0	4	4
	IT812	Software Testing	3	1	0	4	4
	IT813	Robotics and Computer Vision	3	1	0	4	4
	IT814	Natural Language Processing	3	1	0	4	4
4	Elective IV						
	IT815	Mobile Computing	3	0	0	3	3
	IT816	Real Time and Embedded Systems	3	0	0	3	3
	IT817	IT in Forensic Science	3	0	0	3	3
	IT818	GIS and Remote sensing	3	0	0	3	3
5	Elective V						
	IT819	Fuzzy logic and neural networks	3	0	0	3	3
	IT820	Intrusion Detection System	3	0	0	3	3
	IT821	Internet Protocol	3	0	0	3	3
	IT822	Cloud Computing					
	IT823	C# and .NET framework.					

9. DEPARTMENTAL PROFILES:

9.1 ELECTRONICS & COMMUNICATION ENGINEERING

The Department of Electronics and Communication Engineering was established in the year 2007 offering 3 Years Diploma in Electronics and Telecommunication Engineering with an annual intake of 30 Students. From 2009, the Department offered 4 years B.Tech degree program in Electronics and Communication Engineering with an annual intake of 66 students (30 Direct entries +36 Lateral entries).

Mission

The primary objective of the department is to impart quality education, training and research in various areas of Electronics and communication engineering with broad emphasis on design aspects of electronic systems.

The Faculty

The Department has 08 members of faculty (8 Assistant Professors) and 01 Lab Technician. The faculty has teaching expertise in various specializations like Communication Systems, Digital Signal Processing, Image Processing & Computer Vision, Power Electronics, Radar Signal Processing, RF and Microwaves, Speech Signal Processing and VLSI Systems.

The Infrastructure

The Department is equipped with 14 labs, a departmental computer centre, departmental library, classrooms equipped with modern teaching aids and staff rooms. The laboratories include Analog Electronics Lab, Linear Integrated Circuits Lab, Digital Electronics Lab, Analog Communication Lab, Digital Communication Lab, VLSI Design Lab, RF, Microwave Engineering & Propagation Lab, Digital Signal Processing (DSP) Lab, Microprocessor Lab, Audio and TV Engineering lab, Satellite and Telemetry Communication lab, Circuit Theory lab, Linear Signals & Systems Lab, Basic Electronics Lab.

The Scopes

There are ample job opportunities in Electronics and

Communication Engineering discipline. An electronics engineer can be employed in the public and private sector industries and organizations such as the Indian Telephone Industries, MTNL, National Physical Laboratories, AIR, Civil aviation, and the police wireless departments. Electronics engineers are also absorbed into the entertainment transmission industry, research establishments, and defense. Many IT sector companies like Yahoo, TCS, Infosys, Accenture, CTS, etc. also recruit electronics engineers. Robotics is another vast field where opportunities abound.

9.2 COMPUTER SCIENCE & ENGINEERING :

The Department of Computer Science and Engineering was established in the year 2007 offering 3 Years Diploma in Computer Science with an annual intake of 30 Students. From 2009, the department offered 4 years B.Tech Degree program in Computer Science and Engineering with an annual intake of 66 Students (30 Direct entries+36 Lateral entries).

Mission

The aim of the department is to provide high quality education with a blend of high quality experiments, to produce leading edge quality professionals.

The Faculty

The Department has 08 members of faculty (Assistant Professor) and 2 lab technicians. The faculty has teaching expertise in various specializations like Adhoc Networks, Mobile Ad-Hoc Network (MANET), Algorithms and Complexity, Compiler Design, Foundations of Information Security, Distributed Computing and Pattern Recognition, etc.

The Infrastructure

The Department is equipped with 18 labs exclusively for the department, 2 departmental computer centres. All computers in the lab have wireless LAN facility connected with NKN of 100 Mbps and BSNL of 2 Mbps. The classrooms are equipped with modern teaching aids. The laboratories include programming with C/C++, Data Structure, Java programming, Compiler design, Operating System/Linux, PC System Technology, Computer Network Lab, Information Security etc. Softwares used are JDK open source, Visual Studio 2010, Fedora Core 12 open source, I-security

Simulator, Embarcadero, Turbo C++.

The Scopes

Computers have become an ubiquitous part of modern life, and new applications are introduced every day. The use of computer technology is also a common place in all types of organizations, academia, research, industry, government, private and business organizations. As computers become even more pervasive, the potential for computer-related careers will continue to grow and the career paths in computer-related fields will become more diverse.

The career opportunities for computer science graduates can be classified into seven categories: programming and software development, information systems operation and management, telecommunications and networking, computer science research, web and Internet, graphics and multimedia, training and support, and computer industry specialists. Some careers require additional formal training or study, and experience working in the field. Graduates find opportunities in many IT sector companies like TCS, Infosys, Accenture, CTS Cognizant Technology Solutions, Computer Associates, Cordys, Cybage Software, Dell, DST Global Solutions, Google, HCL, HP, IBM, IGATE Global Solutions, Infosys, Larsen & Toubro Ltd, NUT Ltd, Microsoft, Oracle, Yahoo etc.

9.3 INSTRUMENTATION ENGINEERING

The Department of Instrumentation Engineering was established in the year 2007 offering 3 Years Diploma in Control and Instrumentation Engineering with an annual intake of 30 students. From 2009, the department offered 4 years B.Tech degree program in Instrumentation Engineering with an annual intake of 66 students (30 Direct entries +36 Lateral entries).

Mission

To inculcate in the students to acquire outstanding skills in the emerging technologies and analytical thinking in the field of instrumentation to meet the challenges in the industry through practice oriented teaching and training.

The Faculty

The Department has 07 members of faculty (7 Assistant Professor)

and 1 Lab Technician. The faculty has teaching expertise in various specializations like Biomedical Instrumentation, Electronics & Communications, Industrial Process Instrumentation, Electronics Design, Mechatronics and Energy Technology etc.

The Infrastructure

The Department is equipped with 11 labs, one departmental computer centre, a departmental library, classrooms equipped with modern teaching aids and staff rooms. The laboratories include the Transducers Lab, Measurements lab, Process Control Lab, Bio Medical Instrumentation Lab, Advanced Instrumentation Lab, Electronics Devices and Digital Lab, Computer Center, Virtual Instrumentation Lab and Embedded systems Lab. Apart from this the students are also trained in the Basic Electronics Lab, Digital & Integrated Circuits Labs, Communication skills Lab, DSP Lab and Microprocessor Lab.

The Scopes

Opportunities abound in process and manufacturing industry such as steel, oil, petrochemical, power and defense. Every process industry have a separate instrumentation department which is manned and managed by instrumentation engineers. "Automationis" the buzz word in process industry, and automation is the core job of this branch of engineers. The growth in the avionics, aeronautical and space science sectors has also increased the scope for Instrumentation engineers. They can also fit in both software and hardware sectors. Instrumentation engineers can get jobs in R&D units of public and private sector companies. They are also required by the heavy industries such as Thermal Power Stations, Steel Plants, Refineries, and Cement and Fertilizer Plants BOTH IN Govt. and private sectors like N.F.L., BHEL, Honeywell, Samsung I, IOCL, and SAIL. Many IT sector companies like TCS, Infosys, Accenture, CTS etc. and Robotics is another vast field where there is a huge need of Instrumentation engineers.

9.4 FOOD PROCESSING TECHNOLOGY

The Department of Food Processing Technology was established in the year 2007 offering 3 Years Diploma in Food

Processing Technology with an annual intake of 30 Students. From 2009, the Department offered 4 years B.Tech degree program in Food Processing Technology with an annual intake of 66 students (30 Direct entries +36 Lateral entries).

Mission

To be a center of excellence which integrates all facets of food technology and be recognized as the focal point for catalyzing the growth of the food processing industry in North east in the global context.

The Faculty

The Department has 06 members of faculty (06 Assistant Professor) and 2 lab technicians. The faculty has teaching expertise in various specializations like food engineering operations, food product development, food analysis, transport phenomena, food chemistry and nutrition, food plant design, marketing and management, etc.

The Infrastructure

The Department is equipped with 07 labs, a departmental library and classrooms equipped with modern teaching aids. The laboratories include the Food Packaging Lab, Food Engineering Lab, Fluid Mechanics Lab, Food Separation Lab, Food Product Development Lab, Food Microbiology Lab and Food Quality Analysis Lab.

The Scopes

Food technologists are required in food processing (snack food, beverages, meat, winery, dairy etc.) sector, food service sector, supply chain, post harvest, food retailing, food regulations, health and wellness service providers. Amul, Godrej Industrial Limited, Dabur India Ltd, PepsiCo India Holdings, Nestle India Pvt Ltd, Britannia Industries Ltd, ITC Limited, Parle Products Pvt Ltd, Agro Tech Foods, Perfetti India Ltd, Cadbury India Ltd, Hindustan Lever Limited, Milkfood, MTR Foods limited etc are some of the popular companies that recruit food technologists in India.

9.5 CIVIL ENGINEERING (CONSTRUCTION TECHNOLOGY)

The Department of Construction Technology was established

in the year 2009 offering 3 Years Diploma in Construction Technology with an annual intake of 30 students. From 2011, the department offered 4 years B.Tech degree program in Civil Engineering (Construction Technology) with an annual intake of 66 students (30 direct entries +36 lateral entries).

Mission

To be recognized as leaders in higher education and research, and to develop human power with creativity, technology and passion for the betterment of India and humankind.

The Faculty

The Department has 05 members of faculty (04 Assistant Professor and 01 Guest Lecturer) and 2 Lab Technician. The faculty has teaching expertise in various specializations like Design of Structures, Environmental Engineering, Geotechnical Engineering, Structural Engineering, Hydraulics Engineering, Solid Mechanics and Transportation Engineering etc.

The Infrastructure

The Department is equipped with 10 Labs exclusively for the department, one departmental computer centre, and departmental library, classrooms equipped with modern teaching aids and staff rooms. The laboratories include the Surveying Lab, Geotechnical Lab, Concrete Technology, Pavement lab, Traffic and transportation planning Lab, Water resource Lab, Environmental Lab, Geology and Seismic Lab, Geoinformatics Lab, Computational Lab.

The Scopes

Civil engineering is a professional engineering discipline that deals with the design, construction, and maintenance of the physical and naturally built environment, including works like bridges, roads, canals, dams, and buildings in both public and private sectors. It focuses on the infrastructure of the world which may include Water works, Sewers, Dams, Power Plants, Transmission Towers/Lines, Railroads, Highways, Bridges, Tunnels, Irrigation Canals, River Navigation, Shipping Canals, Traffic Control, Mass Transit, Airport Runways, Terminals, Industrial Plant Buildings, Skyscrapers, etc. Indian Railways, BEML, NHPC, PWC, NTPC, DVC, ONGC, BHEL, Jaypee, L&T, Reliance Infra Pvt etc. are some of the private and public sector companies recruits Civil engineers.

9.6 INFORMATION TECHNOLOGY

The Department of Information Technology was established in the year 2011 offering 4 year B.Tech Degree program in Information Technology with an annual intake of 66 students (30 Direct entries + 36 Lateral entries) affiliated to Gauhati University.

Vision

The vision is to contribute towards research in the field of Information Technology and to fulfill the increasing demand for highly qualified manpower in the field of software industries as well as academic institutions.

Mission

The mission of the Department is to create knowledge resources and to educate and train youths in the latest technologies in IT, to imbibe in them human values, self-confidence and independent thinking in tackling diverse problems in the field of IT so that they can serve the country and the human society at large.

The Faculty

The Department has 04 members of faculty (04 Assistant Professors) and 1 Lab Technician. The faculty has teaching expertise in various specializations like Network security, Computer Networking, Sensor networks, Distributed Computing, Web design etc.

The Infrastructure

The Department is equipped with excellent infrastructure. The laboratories include Information Security lab, Network lab, Multimedia lab, Software lab, and Hardware lab etc. The software available in the lab are Redhat Linux, i-security simulator, Oracle 11g, Visual Studio 12, adobe CS6, LAN-trainer simulator, IBM Rational Rose, IBM DB2, IBM AIX server etc.

The Scopes

Broad categories of career options in the IT field are Information Technology- Hardware, Information Technology- Software, IT enabled Services (ITeS), Business Process Outsourcing (BPO) and Knowledge Process Outsourcing(KPO) etc., Typical designations/ roles of jobs available in IT field are Business Analyst, Database Administrator (DBA), Database Architect/ Designer, ERP, Graphic Designer/ Animator, Game designer, Web administrator, Network

Administrator, Project Leader/ Project Manager, Quality Assurance – Manager, Software Engineer/ Programmer, Software Test Engineer, System Administrator, System Analyst, Tech Architect, Team Leader/ Technical Leader, Technical Support Engineer and Quality Assurance etc. Job opportunities in software engineering are available in many software companies in India which include Accenture, ADP, Apps Associates, Birla soft, Broad ridge, Cap Gemini, Capital IQ, Caritor, CMC Ltd, Cognizant Technology Solutions, Computer Associates, Cordys, CSC, Cybage Software, Dell, DST Global Solutions, Google, HCL, HP, IBM, IGATE Global Solutions, Infosys, Larsen & Toubro Ltd, NUT Ltd, Microsoft, Oracle, Tata InfoTech Ltd, Polaris, Tata Consultancy Services, Yahoo etc.

9.7 ANIMATION AND MULTIMEDIA TECHNOLOGY

The Department of Animation and Multimedia Technology was established in the year 2009 offering 3 Years Diploma in Animation and Multimedia Technology with an annual intake of 30 students.

Mission

As Animation is a creative technical field, it calls for a wide bouquet of skills from traditional art skills to articulation skills, storytelling to aesthetic appreciation, and creativity to technical prowess. The Department has a soothing environment to let the creative minds take their flight.

The Faculty

The Department has 04 members of faculty (04 Lecturers) and 2 Lab Technicians. The faculty has teaching expertise in various specializations like Graphic and Multimedia design, 2D & 3D model construction, CG Lighting, Animation, Audio & Video editing etc.

The Infrastructure

The Department is equipped with 5 labs exclusively for the department, a classroom equipped with modern teaching aids and staff rooms. The laboratories have latest mid and high-end Workstations and iMac PCs for the students to work on 3D Modeling, Texturing, Rigging, Animation, CG Lighting,

Dynamics, Audio and Video Editing installed with the latest versions of the 3D Software and Internet Connectivity.

The Scope

India has the world's largest entertainment industry, a robust software industry and also skilled manpower, all essential ingredients for the growth of animation industry. The prominent players include Crest Communications, Data quest International Pvt. Ltd, Technicolor-India, *Green Gold Animation Pvt Ltd*, *Dhruva Interactive*, Gameshastra, Lakshya Digital , FX Labs, EA mobiles , Maya Entertainment, Xentrix Studios, **iRealities**, **Sunovatech India** , **Zee Network**, **Sai Animation Studios**, **Xgen** animation, Toonkaar Sona Entertainment Pvt. Ltd., **Splice Animation studio**, Prana Studios, Reliable Technologies, Reliance Digital, Reliance Media works. The animation studios are catering to the requirements of segments such as feature films, television programmes, advertisements and computer games. Currently, Indian animation players are predominantly catering to the needs of overseas television program production companies. The Indian animation industry is pegged to grow at an unbelievable rate of 30% annually.

9.8 ALLIED ENGINEERING BRANCHES

The allied engineering branches include Mechanical and Electrical Engineering. At present Mechanical Engineering branch is manned by 3 Assistant Professors and 2 Lab technicians. The Electrical Engineering branch has 2 Assistant Professors and 1 Lab technician.

9.9 BASIC SCIENCES

The Department of Basic Sciences includes faculties from Mathematics, Physics, Chemistry and Environmental Sciences. There are 6 Assistant Professors in Mathematics, 2 in Physics, 2 in Chemistry and 1 Guest faculty in Environmental Sciences.

9.10 HUMANITIES & SOCIAL SCIENCES

The Department consists of English, Economics and Sociology. At present it is manned by 3 Assistant Professors from English, 2 from Economics and 1 from Sociology.

10. GENERAL ACADEMIC REGULATIONS

10.1 General Conduct & Discipline:

All students must conduct themselves as responsible people (as ladies & gentlemen). Students are not allowed to:

- (i) Willfully damage or steal or remove property/belongings of the Institute/Hostel or fellow students
- (ii) Indulge in possession, consumption or distribution of alcoholic drinks and drugs.
- (iii) Take part in noisy and unseemly behaviour and disturb studies of fellow students.
- (iv) Resort to ragging fresher/fellow students.
- (v) Take recourse to unfair means in examinations.
- (vi) Use Mobile Phones/I-Phones etc. in the academic buildings, library, laboratories & workshops.

10.2 Leave of Absence (Degree/Diploma):

All leave applications have to be submitted to the concerned Course Coordinators/HoDs stating fully the reasons and supported with documents. Leave of absence will be accepted only within a week of the student's rejoining of classes after ailments or other granted leaves. If a student will be away from the Institute for more than one week then prior application has to be submitted to the Principal through the concerned HoD and such leaves will have to be sanctioned in advance. If a student is absent from the Institute for more than 06 (six) weeks without permission then that will result in his/her name being struck off from the Institute's Rolls. Under no circumstances should a student's attendance fall below 65%. In other words no consideration in attendance will be made once a student's attendance falls below 65% in a subject.

10.3 Change of Branch (Degree/Diploma):

Depending on the availability of seat, changing of branch in 3rd Semester is allowed based on the performance of the student during the first two semesters.

1. A maximum of 10% of the total number of seats in a Branch may be offered to applicants for change of branch subject to

availability of seats in that branch.

2. The selection of applicants will be based on merit. No applicant with back paper(s) will be considered for change of branch.

10.4 Registration (Degree/Diploma):

A student has to register for continuation of study every Odd Semester. Registration Fees will be fixed and announced by the Registrar's Office from time to time. Dis-Collegiate students will have to re-register for the semester they are re-admitting to and such fees will also be duly notified from time to time.

11. Regulations for Diploma

(The following rules and regulations are taken from the Examination Rules and Regulations (2006-2007) Amended issued by DTE, Assam.)

11.1 Attendance, Examination & Mobility Rules:

Rule 4.10 states "An internal student of an institute shall be permitted to appear in semester examinations as regular student who has attended at least 75% of classes held in each of the theory and practical subject individually."

Rule 4.15: The head of the institute shall be competent to disallow a candidate from appearing in the whole or part of the examination if the candidate is found to be:

- (i) Deficient in the attendance of requisite number of classes held and/or deficient in securing the minimum pass marks in the sessional.
- (ii) Showing misconduct or ill behavior to any of the Institute staff member, invigilating officer, examiner or any member of the examination cell of the Institute.
- (iii) Resorting to strike and/or adopting unfair means in examination in any paper of any subject and/or violating the rules of examination.

Rule 5.2: A student has to attain a minimum attendance in each subject and secure the minimum pass marks prescribed for a pass

in the sessional of each subject.

Rule 5.3: A student failing to attain the minimum attendance and sessional even in a single subject will not be allowed to appear in the semester end examination and he/she has to repeat the semester again by attending classes.

Rule 5.4: Such type of candidate will not be allowed to move to the higher semester without sitting in the previous semester end examination.

Rule 5.7: A student will be allowed to appear altogether in 11 subjects only in end semester examinations including all subject of the regular semester with five arrear back subjects to be cleared.

Rule 5.9: A student must clear all back subjects of 1st semester for promotion to 5th semester, similarly must clear all back subjects of 2nd semester for promotion to 6th semester.

Rule 5.10: Those students who are not promoted and cannot take admission in 5th and 6th semester can appear in back subject of the lower semesters.

Rule 5.11: To pass in a subject a candidate must secure pass marks in both theory and practical/viva component individually.

Rule 5.12: A student failing in any one component of a subject (either theory or practical) will have to reappear in that component only as back candidate in which he/she has failed.

Rule 5.13: Total marks and pass marks of a subject will be as per curriculum structure and scheme of examination.

11.2 Duration for Completion of Course:

Rule 5.14: Maximum permissible period for completion of Diploma course by a student shall be 6 academic calendar years from the date of admission.

11.3 Re-examination & Re-evaluation of Answer Scripts:

Rule 7.6: Re-examination of answer scripts may be allowed provided the candidates concerned apply with a re-examination fee as prescribed per paper within 21 days from the date of publication of result of the respective examination to the

Secretary of Examination Committee of SCTE, Assam. Re-examination means re-totalling of marks and scrutiny of any answer not valued already. No re-evaluation or re-examination of practical and sessional works of any examination shall be permitted.

11.4 Award of Diploma/Class/Division:

Rule 8: A student is eligible for award of Diploma only if he/she passes in all subjects. The award of class shall be based on the marks obtained in the 4th, 5th & 6th semester examinations. However, the division will be (i) First class with Hons. – 60% and above and passing all the subjects of all the six semester examinations in single sitting (ii) First class – 60% and above (iii) Second class – less than 60%.

11.5 DIPLOMA EVALUATION SCHEMES:

Theory		Practical	
Sessional	End Semester Exam	Sessional	End Semester Exam
Mid Semester Exam: 10 marks Other Evaluations: 10 marks Attendance: 10 marks Total = 30 marks (Pass Mark: 30% for Humanities & Basic Sciences; 40% for Core Engg. papers)	70 Marks (Pass Mark: 30% for Humanities & Basic Sciences; 40% for Core Engg. Papers; 50% for Project Seminar etc.)	25 Marks (Pass Mark: 13)	25 Marks (Pass Mark: 12)

12. Regulations for B. Tech Programme

12.1 Attendance:

Attendance in all classes (lectures, tutorials, laboratories, practical, workshops, etc) must be at least **75%** of the total classes. Students with shortage of attendance will not be allowed to write the semester examinations and will be awarded an F grade (i.e. Fail) in that subject. Such students have to reregister and go through the entire course once again (Sessional & Semester End Examinations).

12.2 Duration for Completion of B.Tech Programme:

The normal duration for completion of B.Tech Programme is 8 Semesters. However a student may be allowed up to 16 consecutive semesters from the first semester registration.

12.3 B.Tech Evaluation Scheme

Theory		Practical	
Sessional	End Semester Exam	Sessional	End Semester Exam
Mid Semester Exam: 25 marks Other Evaluations: 10 marks Attendance: 5 marks Total = 40 marks (Pass Mark: 12)	60 marks (Pass Mark: 18)	30 marks (Pass Mark: 09)	70 marks (Pass Mark: 21)

Students must pass all the above four components separately. Students failing in sessional will not be allowed to register for the higher semester.

The Grading System in force as per Gauhati University is as under:

Range of Marks	Letter Grade	Grade Point	Description
90 – 100	A	10	Excellent
75-89	B	08	Good
55-74	C	06	Fair
40-54	D	04	Average
30-39	E	02	Poor
Below 30	F	00	Fail
Attendance < 75%	FA	00	Fail

Conversion Formulae: For GPA below 9.0 : % of marks = $10 * CGPA - 5$
 For GPA above 9.0 : % of marks = $15 * CGPA - 50$

For Class I : Minimum CGPA must be 7.0

For Class II : Minimum CGPA must be 5.0

12.5 Re-evaluation of Answer Scripts:

Revaluation for B.Tech Programme will be as per Gauhati University Guidelines and students are required to follow the same.

register and repeat the whole semester with a junior batch.

V. However, concession in attendance will be made in the following cases:

13. EXAMINATION RULES AND REGULATIONS

- I. The Institute follows a continuous evaluation system and all assessments made during the semester carry weightage to the final marks obtained by a student in a particular course/subject.
- II. Attendance in lectures, tutorials and practical is compulsory. A student has to secure minimum 75% attendance separately in lectures, tutorials and practical in order to be able to sit for the final semester examination which is held at the end of every semester.
- III. Performance in attendance will be made known to the students at the end of every month. Warnings will be issued to those students who have less attendance and such students will be asked for their reason(s) of absence by the respective Course Instructors.
- IV. Students who fail in attendance (in more than 2 subjects) are not allowed to sit for the semester examination. Such students will be declared “Dis-Collegiate” and will not be promoted to the higher semester. They will have to re-

- (a) Illness of the student;
- (b) Natural calamity at home;
- (c) The student has represented the Institute in such events which are important to the Institute.
- (d) Application with valid reasons of absence has been submitted to the respective Course Instructors/ Head of Departments within a week of re-joining classes in case of (a) above and prior application has been granted by the Head of the Institute through the respective HoD in cases (b) & (c).
- (e) No applications for leave will be accepted once the final attendance has been declared by the Examination Branch even if they are forwarded by Course Instructors or HoDs.

VI. Under no circumstances students’ attendance below 65% will be considered. In other words, if a student’s attendance comes below 65% in any course(s) then concessions for attendance will not be made unless

otherwise approved by the Head of the Institute on extraordinary grounds.

- VII. At least one assessment (class test/assignment/quizzes/surprise test/open book test etc.) will be made before the mid semester examination and marks obtained by the students will be displayed by the respective Course Instructor(s).
- VIII. A student must clear all back subjects of 1st semester for promotion to 5th semester, similarly must clear all back subjects of 2nd semester for promotion to 6th semester
- IX. Mid Semester examination will be centrally conducted by the respective departments and the time schedule will be notified by the Examination Cell of the Institute.
- X. At least one more assessment (class test/assignment/quizzes/surprise test/open book test etc.) will be made after the mid semester examination and displayed to the students.
- XI. Evaluations made in Sl. No. VII, VIII & IX along with marks allotted for attendance constitute the Sessional component of a subject. A student is to secure the minimum passing mark in Sessional of all the subjects of a semester otherwise he/she will be declared "Dis-Collegiate" and not promoted to the higher semester. Such students will not be allowed to sit the semester examinations of all subjects. They will have to re-register and repeat the whole semester. This will apply for both theory and practical components of a paper. Pass marks in Sessional are different for different components: **30% of total marks for B.Tech** & it varies from **30% – 50% for Diploma** depending on the nature of the course(s). Information may be obtained from the Course Structures available with the Examination Cell or from the different Departments.

aggregate and 50% of marks for GEN/OBC candidates (45% of marks for ST/SC/PH candidates) in Science, Mathematics (or Advanced Mathematics) and English taken together.

Age limit: The age of the candidates as on 01-08-2014 must not exceed the following age limit for different categories- (i) GEN/OBC-19 years; (ii) SC/ST/PH-24 years; (iii) Female Candidates-22 years

B. Tech:

Educational Qualification:

- (i) Direct Entry: 10+2 (Science) with 45% marks in the aggregate and 50% of marks in Physics, Chemistry and Mathematics taken together for GEN/OBC candidates (relaxed upto 5% for ST/SC/PH candidates).
- (ii) Lateral Entry (Vertical Mobility): Diploma in the concerned branch of Engineering/Technology from CIT with 65% marks or equivalent CGPA for GE/OBC (relaxed upto 5% for SC/ST/PH)
- (iii) Lateral Entry (CITLET): Diploma in AICTE recognized related branch of Engineering/Technology with 60% marks or equivalent CGPA for GEN/OBC (relaxed upto 5% for SC/ST/PH) or B.Sc (with Mathematics as one of the compulsory subjects) with minimum of 55% marks for GEN/OBC (relaxed upto 5% for SC/ST/PH)

Age limit:

- (i) Direct Entry: Candidates must not be above 21 years, or below 17 years of age as on 01-08-2014. The upper age limit is relaxed to 3 years for Schedule Caste and Schedule Tribe candidates.
- (ii) Lateral Entry: 40 years (45 years for SC/ST/PH and 43 years for OBC and female candidates) as on 01-08-2014

14. Eligibility Criteria

Diploma:

Educational Qualifications: Candidates must have passed HSLC or equivalent with 45% marks in the

15. Reservation Policy:

In filling up of the available seats, the institute shall follow the following reservation policy.

- (i) 60% from BTC (60% ST, 5% SC, 15%OBC and 20% General)
- (ii) 20% from North-East region excluding BTC.
- (iii) 17% from All India excluding North-East Region.
- (iv) 03% for physically handicapped candidates irrespective of region.

The selection of serial no. (ii), (iii) & (iv) will follow the reservation policy for SC, ST, OBC and General as laid down by the Central Government. In case the seats as mentioned in (ii), (iii) & (iv) are not filled up by respective candidates, the seats will be filled up by candidates from the BTAD region.

16. Lateral Entry Seat Distribution Scheme:

REGION	CATEGORY	ECE	CSE	IE	FPT	CE	IT	TOTAL
BTAD (22)		1	1	1	1	1	1	13
	ST (13)	1	1	1	1	1	1	
	SC(1)				1			
	OBC(3)	1	1				1	
	GEN(5)	1	1	1		1	1	
NE (7)	ST (1)			1				
	SC(1)					1		
	OBC(2)	1	1					
	OPN(3)	1		1		1		
AI (6)	ST (1)						1	
	SC(1)				1			
	OBC(2)		1	1				
	OPN(2)				1	1		
PH	OPN(1)						1	
TOTAL	36	6	6	6	6	6	6	36

BRANCH SPECIFIC ELIGIBILITY CRITERIA FOR B. Tech. (LATERAL ENTRY)

BRANCH	ELECTRONICS & COMMUNICATION ENGG.	COMPUTER SCIENCE & ENGG.	INSTRUMENTATION ENGG.
Eligibility (Branch at Diploma)	<ul style="list-style-type: none"> ✓ Electronics Engg. ✓ Control & Instrumentation Engg. ✓ Electrical Engg. 	<ul style="list-style-type: none"> ✓ Computer Sc & Engg. ✓ Electronics Engg. ✓ Control & Instrumentation Engg. ✓ Electrical Engg. 	<ul style="list-style-type: none"> ✓ Control & Instrumentation Engg. ✓ Electronics Engg. ✓ Electrical Engg.
BRANCH	FOOD PROCESSING TECHNOLOGY	CIVIL ENGINEERING	INFORMATION TECHNOLOGY
Eligibility (Branch at Diploma)	<ul style="list-style-type: none"> ✓ Food Processing Technology ✓ Food Engg. ✓ Food Technology ✓ Agriculture Engg. ✓ Chemical Engg. ✓ Biotechnology ✓ Biochemical Engg. 	<ul style="list-style-type: none"> ✓ Construction Technology ✓ Civil Engg. ✓ Architecture 	<ul style="list-style-type: none"> ✓ Information Technology ✓ Animation & Multimedia ✓ Any Branch

17. Admission Procedure:

Diploma: A candidate may be admitted into the Diploma programme of CIT in two ways. The first is by appearing in CITEE2014 conducted by CIT, Kokrajhar and getting selected in it. These candidates are to attend the counseling called by CIT, Kokrajhar. The second way is by appearing in Polytechnic Admission Test (PAT) 2014 conducted by Director, State Council for Technical Education (SCTE), Guwahati. The candidates appearing in PAT are to attend counseling called by SCTE whereby their eligibility would be verified and their admission forwarded to CIT, Kokrajhar.

Degree (Direct): A candidate may be admitted into the first semester of Degree programme of CIT in two ways. The first is by appearing in CITDEE2014 conducted by CIT, Kokrajhar and getting selected in it. These candidates are to attend the counseling called by CIT, Kokrajhar. The second way is by applying and appearing in JEE Main 2014 conducted by CBSE, New Delhi. These candidates should also separately apply to CIT, Kokrajhar and submit the JEE Main score cards to the Member Secretary, Admission Committee, within ten days of the declaration of the JEE Main results. A separate selected list will be prepared for JEE Main qualified candidates depending on the cutoff marks decided by the Admission Committee of the Institute. Candidates appearing for CITDEE2014 may also submit their JEE Main scores to the Member Secretary, Admission Committee, CIT, mentioning CITDEE2014 Roll No/Application No. for consideration of their candidature for selection under the JEE Main qualified list.

Degree (Vertical/Lateral): Candidates who have passed from CIT in the current year having requisite qualifying marks should submit their application and would be admitted without any entrance examinations. Those candidates who have passed from CIT and did not get the qualifying marks for Vertical Entry and has qualifying marks for Lateral Entry should apply and appear in the CITLET2014. Candidates who have passed Diploma from other AICTE recognized institutions have to apply and appear in CITLET2014 for consideration of their candidature for admission into the third semester (second year) of Degree programme under the Lateral Entry scheme.

18. Selection Process:

The selection of aspiring candidates for admission shall be based on their performance in the respective Entrance Examinations. However, the candidates must fulfill the eligibility criteria of essential Educational Qualification and Age Limit. The selection will be based on merit separately for all regions and reservation categories. Candidates who fail to furnish the proofs for their claims in respect of reservation of seat pertaining to region and category shall not be considered.

A single merit/ranking list would be prepared based on the performance of the candidates in the Entrance examination. The ranking for CITEE-2014 will depend on the marks obtained in the total, then in Mathematics, Physics, Chemistry, Biology and English. The ranking for CITDEE-2014 will depend on the marks obtained in the total, then in Mathematics, Physics, Chemistry and English. The ranking for CITLET-2014 will depend on the marks obtained in the total Paper I and Paper II, then in Paper II and Mathematics, Physics, Chemistry and English in Paper I.

Those candidates who have already appeared in CITDEE2014 and are seeking admission through JEE Main 2014 scores must submit their score cards to Member Secretary by Speed Post/Email (scanned copy) within 10 days of declaration of JEE Main 2014 results mentioning clearly the CITDEE2014 Roll No/Application Form number.

Those candidates who have not appeared CITDEE2014 and are seeking admission through JEE Main scores must buy the application form of CIT and submit it along with their JEE Main score cards to Member Secretary by Speed Post/Email (scanned copy) within 10 days of declaration of JEE Main results. Online application forms must always be accompanied with the requisite amount of Demand Draft.

19. How to Apply:

The aspiring eligible candidates must fill up the enclosed Application Form in original and submit to "**The Member Secretary, Admission Committee, CIT, Kokrajhar, BTAD, Assam - 783370**", by general/registered/speed post. The Application Form must reach the given address

on or before April 25, 2014 (5:00PM). The Application Forms received after the last date shall be rejected.

20. Entrance Examination Fees:

The candidates collecting the Application Forms from different selling centers need not submit any examination fees (the price of Information Brochure is inclusive of Examination fees). However, the candidates applying in the Online Application Form from CIT website must submit a demand draft of Rs.800/- (Eight Hundred) only for GEN/OBC candidates and Rs.400/- (Four hundred) for SC/ST/PH only in favour of "**Entrance Examination CIT, Kokrajhar**" payable at '**SBI, North Kokrajhar, Kokrajhar**' drawn on any nationalized Bank of India along with the Application Form.

While filling up the Application Form, refer to the Guidelines for filling the Application Form.

21. Important Codes and Code numbers

(i) Entrance Test/Entry Scheme:

Entrance	Code	Code Number
Diploma	CITEE	1
Degree (Direct)	CITDEE	2
JEE Main	JEE	3
Degree (Vertical)	CITVAD	4
Degree(Lateral)	CITLET	5
Degree (Direct)	CITDEE & JEE	6
Degree (Lateral/Vertical)	CITLET & CITVAD	7

(ii) Examination Centre:

Examination Centre	Code	Code Number
KOKRAJHAR	KOK	1
GUWAHATI	GUW	2
UDALGURI	UDL	3
BARAMA	BAR	4
KAJALGAON	KAJ	5

If there are less than 50 applicants for a particular Examination Centre, then candidates will be shifted to their next choice of Examination Centre. **The CITLET 2014 will be held only in Kokrajhar.**

(iii) Reservation Category

Reservation Category	Code	Code Number
Open	OPN	1
Other Backward Classes	OBC	2
Scheduled Castes	SC	3
Scheduled Tribes	ST	4
Physically Handicapped	PH	5

(iv) Region of Permanent Residence:

Region	Code	Code Number
All India (excluding NE & BTAD)	AI	1
North Eastern (excluding BTAD)	NE	2
Bodoland Territorial Autonomous Districts	BTAD	3

(v) Caste:

Caste Name	Code	Code Number
General	GEN	1
Other Backward Classes	OBC	2
Scheduled Castes	SC	3
Scheduled Tribes	ST	4
Others	OTH	5

(vi) Nationality:

Nationality	Code	Code Number
Indian	IND	1
Non Indian	NIN	2

Discrepancies found in the information furnished in the Counselling Form and that in the Application Form may result in the cancelation of admission.

The *presence of the candidate is compulsory during counseling*. Under exceptional cases, a parent may be permitted to stand in lieu of the candidate.

All the qualified candidates (i.e those scoring above a minimum cutoff mark) would be called for counseling on a single day. However, all candidates called for counseling are not guaranteed a seat. Admission depends on fulfillment of eligibility and availability of seat.

The candidates should not forget to bring the original and photo copy of all the requisite certificates during the day of counseling At the time of counseling and admission the selected candidates must provide the following certificates:

- (a) Four passport size photos
- (b) Age proof certificate
- (c) Marksheet of HSLC or equivalent
- (d) 3 attested Mark Sheets of 10+2 (Sc) or equivalent.
- (e) Permanent Residential Certificate (PRC)
- (f) Caste Certificate (in case of SC/ST/PH)
- (g) Physically Handicapped (PH) Certificate (if applicable)
- (h) Conduct/ Character Certificate from the institution last attended.
- (i) Gap Certificate (if applicable)
- (j) Transfer Certificate in original
- (k) Migration Certificate in original.
- (l) A photo copy of Registration Card of HSSLC (10+2)

The certificates listed from (b) to (i) are compulsory for counseling and the rest must be submitted within 15 days from the date of admission otherwise the admission stands cancelled.

22. Declaration of Result:

The Results of Entrance Examination and the selected list of the eligible candidates for admission will be declared on June 3, 2014 at 5:00 pm for CITEE2014 (Diploma), CITDEE2014 (Degree) and CITLET2014 (Degree Lateral). The Results and selected list will be available on the Notice Board of the Institute. The candidates may also log on to CIT website: www.cit.ac.in to check their status.

23. Counseling and Admission:

The counseling and admission for Diploma courses will be conducted on 23rd June 2014 for CITEE2014 and that for Degree Courses will be on 24th June 2014 for CITDEE2014 and 25th June 2014 for CITLET2014 qualified candidates.

Candidates selected for admission must get themselves admitted by payment of the fees on the date of counseling failing which their selection shall automatically be treated as cancelled.

During the days of counseling, the candidates have to apply for the available branches separately in the Counseling Form to be issued before the start of counseling and the branches will be allotted by the Chairperson of the Admission Committee after thorough verification of requisite eligibility criteria by the Counseling Committee.

24. Medium of Instruction:

The medium of instruction is English.

25. Anti-Ragging:

Ragging is banned in CIT and any one indulging in Ragging during the entire period of his/her study in CIT is likely to be punished appropriately which may include expulsion from the Institute, suspension from the Institute or classes for a limited period, or fined with a public apology. The punishment may also take the shape of

- (i) Withholding Results
- (ii) Withholding Scholarships or other benefits

- (i) Suspension or expulsion from the Hostel or Mess or Collective Punishment if the individual committing or abetting ragging is not identified, and/or an entry in the conduct certificate mentioning the act of ragging indulged in by the students concerned.

All the admitted students have to submit an affidavit on a non judicial stamp paper duly notarized by the Oath Commissioner by the student and the parent/guardian separately in a format that is provided in Annexure I and II respectively within one month from the date of admission otherwise the admission stands cancelled. Further all the students admitted into the hostels have to submit a separate affidavit provided in Annexure III.

26. Fee Structure for Admission:

The fee structure for admission (excluding hostel fees) to the institute of the current year is as given below:

1 st Year	Diploma	Degree		
		Assam(DTEA,AHSEC)	Assam(CBSE)	Outside Assam
GE/OBC	Rs. 9928/-	Rs.17770/-	Rs.18730/-	Rs. 23880/-
SC/ST/PH	Rs. 9680/-	Rs. 14020/-	Rs. 14980/-	Rs. 20120/-

N.B.: The institute reserves the right to review the fee structure. (The Council/University fees may change as notified by them)

27. Admission Withdrawal Rule:

Withdrawal of Admission is allowed till 30 days from the date of admission. Refund of Fees after deducting processing fees would be done within this date. No request for refund of fees would be entertained after this period.

28. Attendance in Class after Admission:

Attendance on the first day of class of the semester is compulsory. Absence from class without proper intimation during the first 15 days would be treated as withdrawal of admission and such a student would not be allowed to join the classes.

ENTRANCE EXAMINATIONS 20

29. Format & Syllabi of CITEE20

The Central Institute of Technology Entrance Examination (CITEE)-2014 will be conducted in three hours of duration with a total of 150 marks. The question paper will consist of five (5) sections: A, B, C, D & E. Section-A consists of twenty five questions in Physics carrying one mark each, Section-B of twenty five questions in Chemistry carrying one mark each, Section-C of twenty five questions in Biology carrying one mark each, Section-D of fifty questions in Mathematics carrying one & two marks & Section-E twenty five questions in English carrying one mark each. The questions will be multiple choices with four options of answers.

Section-A

PHYSICS (25 marks)

Units and Measurement of Physical Quantities:

Fundamental and Derived units, System of Units, Accuracy of measurement, measuring instruments.

Force and Motion: Uniform and non-uniform motion, Scalar and vector quantities, Graphical representation, Vector addition and subtraction, Speed and velocity, Distance-time, speed-time and velocity-time graph, Uniform acceleration, Equations of motions and their applications, Force and acceleration, Newton's laws of motion, mass and inertia, Concept of momentum, relation between force and momentum.

Gravitation: The universal laws of gravitation, Newton's third law and gravitation, acceleration due to gravity, Concept of mass and weight, Laws of freely falling bodies under gravity, centre of gravity and its determination for a regular body.

Vibration and Waves: Elementary ideas of periodic and simple harmonic motion, time-period and frequency of the simple harmonic motion, Simple pendulum and restoring force, Graphical representation of waves, Wavelength, frequency and velocity of the waves, Longitudinal and transverse waves, Sound waves, Application of ultra sound waves.

Work, Power and Energy: Work done by a constant force, Kinetic and potential energy, Power and its units.

Heat and thermometry: Concept of temperature, measurement of temperature using thermometer, Fahrenheit and Celsius scales of temperature, Heat energy, specific heat, mechanical equivalent of heat, Change of state and concept of latent heat, Humidity of air.

Magnetism: Magnet and its property, poles of a magnet, magnetic lines of force, different kinds of magnet, Magnetic domains.

Light: Laws of reflection and refraction, reflection and refraction of light at plane and curved surfaces, spherical mirrors, Refraction by spherical lenses, Ray diagram for locating images by lenses and mirrors, Lens and mirror formula and their uses, Linear magnification, Human eye and defects of vision.

Basic Electricity: Charges, Electric lines of force, potential due to a charge, Motion of charges and electric current, Ohm's law, Series and parallel combination of resistances, Electric current and transfer of energy, Electromagnetism and effect of current, Elementary ideas of electromagnetic induction, Electric motor, Generation and domestic uses of electricity.

Solar system and the Universe: Stars and galaxy, the sun and the solar system, planets and their motion, the origin of the universe, Artificial Satellites.

Nuclear Energy: Concept of nucleus of an atom, nuclear fission and fusion, Nuclear reactor.

SECTION-B

CHEMISTRY (25 marks)

Atomic structure: Dalton's atomic theory, elements, compounds, cathode ray, X-ray, radio-active radiations, Rutherford model of atomic structure, Bohr's model of atomic structure and electronic configurations, Electronic configuration of the elements up to At. No. 18, Radioactivity and properties of α , β and γ rays, Radio-isotopes and their uses, Nuclear fission and fusion reactions.

Classification of Elements: Mendeleef and modern periodic table, Electronic configuration of each group, periodic trend of metallic and non-metallic character, atomic size, nature of bonding, ionization potential and electron affinity, prediction of properties of an element and their compounds.

Chemical bonding: Octet rule and inert gas configuration as criteria of stability, ions, atoms and valency, Ionic bonds , covalent bonds (in simple cases), shape of molecules of $H_2O, NH_3, CH_4, CCl_4, C_2H_4, SF_6, PCl_5$.

Chemical reactions: Decomposition, displacement reactions, Isomerization reaction, combination reactions, chemical formula and equations, Atomic and molecular masses, Mole concept, gram atomic mass, Determination of formula of unknown compounds and balancing of equations.

Energetic: Bond energy, Energy involved in a reaction, Photo-chemical reactions and generation of free radicals, Electrolysis of water and NaCl, Electrochemical cells (Galvanic cell), Dry cells, Storage cells, metallic corrosion.

Metals: Physical and chemical properties, Metal reaction with O_2 , dil acid, Cl_2 , Electrochemical series and displacement of metals from the solutions, Elementary metallurgy of Fe, Al and uses of metals, Washing soda, Baking soda , lime, preparation of Bleaching Powder, Plaster of Paris.

Non-metals: Physical and chemical properties, reaction with O_2 , acid, Cl_2, H_2 , Manufacture of NH_3 and its reaction with O_2, HCl & CuO , Extraction of Sulphur and its reaction with O_2 , conc. HNO_3 and conc. H_2SO_4 , Carbon and its compounds, Allotropes of carbon, hydrocarbon, alkanes, isomerism in alkanes, Petroleum, Preparation and properties of CH_3OH, CH_2CH_2OH , general methods of preparation, properties of organic acids-COOH group, esters, Nylon, Ployster, Rubber, Soap, detergents, Biomass as fuel, fossil fuel, coal, petroleum, Natural gas, classification of fuels, Calorific value of fuel, Ignition of temperature, combustion of fuel, Ideal fuel. Coal deposits on earth, constituents of lithosphere, Green house effect, Oceans, composition and its important function.

Practical: Carbon, Nitrogen and O_2 cycles on earth, Solubility and saturated solutions, solutions and suspension, distillation, hard and soft water, To show the presence of CO_2 , water vapor and dust particle in atmosphere, To identify the combustion product of fuels (CO_2 and H_2O only), condition of rusting, effect of heating on sulphur, Primary air pollutant, Solubility of ionic and covalent compounds in any given solvent, electrical conductivity of ionic and covalent compounds, Determination of m.p., b.p. of ionic and covalent compounds, Heat change during melting of solid or freezing of liquids. Physical change and chemical changes, (Fe+S mixing and heating), Heat of reaction and Heat of dissolution, Construction of Voltaic cells,

Relationship between current, time and metal deposited during electrolysis of copper.

SECTION-C

BIOLOGY (25 marks)

Ways of living Habitats: Living places and programme, the habitat, Micro-habitats, Interdependence, Land, Water and Air as habitats, Adaptation, Terrestrial and Aquatic habitats, Adaptation in plants and animals.

Organization in the living world: Level of organization, species and population, General basis of organization, Discovery of Cell, Cell Theory, Prokaryotic and Eukaryotic cell, Ultra-structure of cell, Cell organelles and their function, Cell Division, Amitosis, mitosis and meiosis, linkages and crossing over and its importance, mutation, Genetic Disorders.

Life Process-I: Nutrition: autotrophic, heterotrophic, mode of nutrition, Photosynthesis, Respiration, Transpiration, Transport of materials, Essential elements and its deficiency symptoms, Blood circulation, Lymph, Excretion, Chemosynthesis, Plant growth and Movement.

Life Process-II: Reproduction: asexual and sexual, Control and Coordination, Chemical coordination in plant and animals, the nervous systems, Pollination and fertilization in flowering plants, fertilization, embryo development, Development of seeds and fruits.

Human Beings: Structure of human body, Digestion and absorption, Breathing and respiration, Body fluids and circulation, excretory products and elimination, Locomotion and movement, Control and coordination, Impact of human on environment.

Nutrition: Energy requirement of the body, Balance diet, Components of our food, Deficiency diseases, Factors leading to deficiency in nutrition, Excessive intake of food.

Food Production: Agriculture task in food production, Food production trends in our country, Food derived from animals, Trends in food production from animals, Animal husbandry, fish as a source of animal food.

Health: Community and personal health, Factors affecting health, Food poisoning, Organic or metabolic diseases, Pollution related diseases, Diseases related to habitat forming substances, Preventive measures, Reproductive health, birth control, contraception and sexually transmitted diseases, Health education, Health and

development.

Biosphere: Structure and function of ecosystem and biosphere, Food chain, Food web, Flow of energy, Cycling of material, Ecological succession, Natural Resources and their conservation, Environmental pollutions, global Environmental changes, Biotic Resources, Environmental ethics and legislation, Botanical garden and herbaria, Zoological parks and Museum.

Man and his environment: Human activity, Abiotic and biotic component of environment, Interrelationship between man and his environment, Natural resources, Overexploitation, conservation, management and replenishment, Industrialization, Recycling of waste materials.

Section-D

MATHEMATICS (50 marks)

Algebra: Sets, their representation and notation, equivalent and equal sets, Finite and infinite sets, Subset, Null set, universal set of a set, Venn Diagrams, set theory operations and their algebra (union, intersection and complement).

Natural numbers, Integers, Rational and Irrational numbers, Surds (Quadratic surds only)

Polynomials and their operations, factorization of polynomials, First Degree equations and in-equations and their solutions including graphical solution for two variables, Solutions of simultaneous equations, Rational expressions, Quadratic equations and their solutions, Laws of indices, logarithms, Arithmetic progression(A.P.), Generation of an A.P., Sum of n terms of an A.P., Simple problems.

Geometry: Point, Line, Collinear Points, Intersecting and non-intersecting lines in a plane, Family of lines Triangles, Congruence Relation in the Set of all triangles; Basic proportionality theorem, Parallelogram & their properties, Pythagoras' theorem and its converse. The concept of a circle as a set of points in a plane, Interior and exterior of a circle. Diameter and circumference of a circle. Arc and sector of a circle. Chord and segment of a circle. Cyclic Quadrilateral. Secant and tangent of a circle. Family of concentric circles. Family of circles through a given point, con cyclic points, circles and common tangent. Direct and transverse common tangents.

Co-ordinate Geometry: Distance between two points, Section formula, Problems related with mid-point & Centroid of triangles.

Trigonometry : Trigonometrical ratios $\sin x$, $\cos x$, $\tan x$, $\cot x$, $\operatorname{cosec} x$, for 0° , 30° , 45° , 60° , 90° . Simple trigonometrical identities, Trigonometrical ratios of complementary angles. Problems on

height and distances (Problems should not involve more than two right triangles).

Mensuration: Concept of perimeter, Area of triangle, square, rectangle, rhombus, trapezium, parallelogram, quadrilateral, circle and circular ring. Volume of cure, Problems on finding volumes and surface areas of combinations of right circular cone, right cylinder, hemisphere & sphere, conversion of solids (not more than two solids).

Statistics & Statistical Data: Introduction of Statistics, Primary & Secondary data, Raw/Ungrouped and grouped data (in case of raw data, the number of observations should not exceed 30). Frequency Table: Class marks, Class intervals, frequency, frequency table, cumulative frequency, cumulative frequency table (in grouped data only equal intervals should be taken).

Measures of Central Tendency: Mean of raw and ungrouped data, Median and Mode of raw data, Properties of mean, median & mode and their significance, relation of mean median & mode.

SECTION –E

ENGLISH (25 marks)

GRAMMAR: The Sentences: Types, Question Tags/Tags Questions, Nouns, Use of Tenses, Non Finite Verbs, The Agreement of verbs with subjects, Adverbs- Position and its Special Use, Comparisons, Prepositions, Co-ordinations and Sub-ordination, Conditionals, Transformation of Sentences, Voice-Active and Passive, Joining of Sentences (Synthesis), Direct and Indirect Speech, The Sequence of Tenses, The Same Word used as Different parts of Speech, Punctuation and Capital Letters.

Vocabulary and Usage: Diminitives, Synonyms, Antonyms, One Word Substitutes, Making Verbs from Nouns and Adjectives, Making Adjectives from Nouns, Making Nouns from verbs, Words followed by Appropriate Prepositions, Proverbs, Verbal Phrases, Miscellaneous Idiomatic expressions, Legal terms, terms used in technology, Words Often Confused/Misused, Common Errors.

Comprehension.

CIT DEGREE ENTRANCE EXAMINATIONS 2014

30. Format & Syllabi of CITDEE 2014

The Central Institute of Technology Degree Entrance Examination (CITDEE)-2014 will be conducted in a duration of three hours with a total of 125 marks. The question paper will consist of four (4) sections: A, B, C & D. Section A consists of twenty five questions in Physics carrying one mark each, Section B consists of twenty five questions in Chemistry carrying one mark each, Section C consists of twenty five questions in English carrying one mark each and Section D consists of fifty questions in Mathematics carrying one or two marks each. The questions will be of multiple choices with four options of answers.

Section A : Physics (25 marks)

Unit 1: Physics and Measurement

Physics, technology and society, SI units, Fundamental and derived units. Least count, accuracy and precision of measuring instruments, Errors in measurement, Significant figures. Dimensions of Physical quantities, dimensional analysis and its applications.

Unit 2: Kinematics

Frame of reference. Motion in a straight line: Position-time graph, speed and velocity. Uniform and non-uniform motion, average speed and instantaneous velocity Uniformly accelerated motion, velocity-time, position- time graphs, relations for uniformly accelerated motion. Scalars and Vectors, Vector addition and Subtraction, Zero Vector, Scalar and Vector products, Unit Vector, Resolution of a Vector. Relative Velocity, Motion in a plane, Projectile Motion, Uniform Circular Motion.

Unit 3: Laws of Motion

Force and Inertia, Newton's First Law of motion; Momentum, Newton's Second Law of motion; Impulse; Newton's Third Law of motion. Law of conservation of linear momentum and its applications, Equilibrium of concurrent forces.

Static and Kinetic friction, laws of friction, rolling friction. Dynamics of uniform circular motion: Centripetal force and its applications.

Unit 4: Work, Energy and Power

Work done by a constant force and a variable force; kinetic and potential energies, work energy theorem, power. Potential energy of a spring, conservation of mechanical energy, conservative and non conservative forces; Elastic and inelastic collisions in one and two dimensions

Unit 5: Rotational Motion

Centre of mass of a two-particle system, Centre of mass of a rigid body; Basic concepts of rotational motion; moment of a force, torque, angular momentum, conservation of angular momentum and its applications; moment of inertia, radius of gyration. Values of moments of inertia for simple geometrical objects, parallel and perpendicular axes theorems and their applications. Rigid body rotation, equations of rotational motion.

Unit 6: Gravitation

The universal law of gravitation. Acceleration due to gravity and its variation with altitude and depth. Kepler's laws of planetary motion. Gravitational potential energy; gravitational potential. Escape velocity. Orbital velocity of a satellite. Geo-stationary satellites.

Unit 7: Properties of Solids and Liquids

Elastic behaviour, Stress-strain relationship, Hooke's Law, Young's modulus, bulk modulus, modulus of rigidity. Pressure due to a fluid column; Pascal's law and its applications. Viscosity, Stokes' law, terminal velocity, streamline and turbulent flow, Reynolds number. Bernoulli's principle and its applications. Surface energy and surface tension, angle of contact, application of surface tension - liquid drops, bubbles and capillary rise. Heat, temperature, thermal expansion; specific heat capacity, calorimetry; change of state, latent heat. Heat transfer- conduction, convection and radiation, Newton's law of cooling.

Unit 8: Thermodynamics

Thermal equilibrium, zeroth law of thermodynamics, concept of temperature. Heat, work and internal energy. First law of thermodynamics. Second law of thermodynamics: reversible and irreversible processes. Carnot engine and its efficiency.

Unit 9: Kinetic Theory of Gases

Equation of state of a perfect gas, work done on compressing a

gas. Kinetic theory of gases - assumptions, concept of pressure. Kinetic energy and temperature: rms speed of gas molecules; Degrees of freedom, Law of equipartition of energy, applications to specific heat capacities of gases; Mean free path, Avogadro's number.

Unit 10: Oscillation and Waves

Periodic motion - period, frequency, displacement as a function of time. Periodic functions. Simple harmonic motion (S.H.M.) and its equation; phase; oscillations of a spring -restoring force and force constant; energy in S.H.M. - kinetic and potential energies; Simple pendulum - derivation of expression for its time period; Free, forced and damped oscillations, resonance.

Wave motion. Longitudinal and transverse waves, speed of a wave. Displacement relation for a progressive wave. Principle of superposition of waves, reflection of waves, Standing waves in strings and organ pipes, fundamental mode and harmonics, Beats, Doppler effect in sound

Unit 11: Electrostatics

Electric charges: Conservation of charge, Coulomb's law-forces between two point charges, forces between multiple charges; superposition principle and continuous charge distribution.

Electric field: Electric field due to a point charge, Electric field lines, Electric dipole, Electric field due to a dipole, Torque on a dipole in a uniform electric field

Electric flux, Gauss's law and its applications to find field due to infinitely long uniformly charged straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell. Electric potential and its calculation for a point charge, electric dipole and system of charges; Equipotential surfaces, Electrical potential energy of a system of two point charges in an electrostatic field.

Conductors and insulators, Dielectrics and electric polarization, capacitor, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, Energy stored in a capacitor.

Unit 12: Current Electricity

Electric current, Drift velocity, Ohm's law, Electrical resistance, Resistances of different materials, V-I characteristics of Ohmic and nonohmic conductors, Electrical energy and power, Electrical

resistivity, Colour code for resistors; Series and parallel combinations of resistors; Temperature dependence of resistance.

Electric Cell and its Internal resistance, potential difference and emf of a cell, combination of cells in series and in parallel. Kirchhoff's laws and their applications. Wheatstone bridge, Metre bridge. Potentiometer - principle and its applications.

Unit 13: Magnetic Effects of Current and Magnetism

Biot - Savart law and its application to current carrying circular loop. Ampere's law and its applications to infinitely long current carrying straight wire and solenoid. Force on a moving charge in uniform magnetic and electric fields. Cyclotron.

Force on a current-carrying conductor in a uniform magnetic field. Force between two parallel current-carrying conductors- definition of ampere. Torque experienced by a current loop in uniform magnetic field; Moving coil galvanometer, its current sensitivity and conversion to ammeter and voltmeter.

Current loop as a magnetic dipole and its magnetic dipole moment. Bar magnet as an equivalent solenoid, magnetic field lines; Earth's magnetic field and magnetic elements. Para-, dia- and ferro- magnetic substances.

Magnetic susceptibility and permeability, Hysteresis, Electromagnets and permanent magnets

Unit 14: Electromagnetic Induction and Alternating Currents

Electromagnetic induction; Faraday's law, induced emf and current; Lenz's Law, Eddy currents. Self and mutual inductance. Alternating currents, peak and rms value of alternating current/ voltage; reactance and impedance; LCR series circuit, resonance; Quality factor, power in AC circuits, wattless current. AC generator and transformer.

Unit 15: Electromagnetic Waves

Electromagnetic waves and their characteristics. Transverse nature of electromagnetic waves.

Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays). Applications of e.m. waves

Unit 16: Optics

Reflection and refraction of light at plane and spherical surfaces, mirror formula, Total internal reflection and its applications, Deviation and Dispersion of light by a prism, Lens Formula, Magnification, Power of a Lens, Combination of thin lenses in contact, Microscope and Astronomical Telescope (reflecting and refracting) and their magnifying powers.

Wave optics: wavefront and Huygens' principle, Laws of reflection and refraction using Huygen's principle. Interference, Young's double slit experiment and expression for fringe width, coherent sources and sustained interference of light. Diffraction due to a single slit, width of central maximum. Resolving power of microscopes and astronomical telescopes, Polarisation, plane polarized light; Brewster's law, uses of plane polarized light and Polaroids

Unit 17: Dual Nature of Matter and Radiation

Dual nature of radiation. Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation; particle nature of light. Matter waves-wave nature of particle, de Broglie relation. Davisson-Gerner experiment.

Unit 18: Atoms and Nuclei

Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model, energy levels, hydrogen spectrum. Composition and size of nucleus, atomic masses, isotopes, isobars; isotones. Radioactivity-alpha, beta and gamma particles/rays and their properties; radioactive decay law. Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number, nuclear fission and fusion.

Unit 19: Electronic Devices

Semiconductors; semiconductor diode: I-V characteristics in forward and reverse bias; diode as a rectifier; I-V characteristics of LED, photodiode, solar cell and Zener diode; Zener diode as a voltage regulator. Junction transistor, transistor action, characteristics of a transistor; transistor as an amplifier (common emitter configuration) and oscillator. Logic gates (OR, AND, NOT, NAND and NOR). Transistor as a switch.

Unit 20: Communication Systems

Propagation of electromagnetic waves in the atmosphere; Sky and space wave propagation, Need for modulation, Amplitude

and Frequency Modulation, Bandwidth of signals, Bandwidth of Transmission medium, Basic Elements of a Communication System (Block Diagram only).

Unit 21: Experimental Skills

Familiarity with the basic approach and observations of the experiments and activities:

1. Vernier callipers-its use to measure internal and external diameter and depth of a vessel.
2. Screw gauge-its use to determine thickness/diameter of thin sheet/wire.
3. Simple Pendulum-dissipation of energy by plotting a graph between square of amplitude and time.
4. Metre Scale - mass of a given object by principle of moments.
5. Young's modulus of elasticity of the material of a metallic wire.
6. Surface tension of water by capillary rise and effect of detergents.
7. Co-efficient of Viscosity of a given viscous liquid by measuring terminal velocity of a given spherical body
8. Plotting a cooling curve for the relationship between the temperature of a hot body and time.
9. Speed of sound in air at room temperature using a resonance tube.
10. Specific heat capacity of a given
 - (i) solid and
 - (ii) liquid by method of mixtures.
11. Resistivity of the material of a given wire using metre bridge.
12. Resistance of a given wire using Ohm's law.
13. Potentiometer –
 - (i) Comparison of emf of two primary cells.
 - (ii) Determination of internal resistance of a cell.
14. Resistance and figure of merit of a galvanometer by half deflection method.
15. Focal length of:

- (i) Convex mirror
- (ii) Concave mirror, and
- (iii) Convex lens.

16. using parallax method plot angle of deviation vs angle of incidence for a triangular prism.

17. Refractive index of a glass slab using a travelling microscope.

18. Characteristic curves of a p-n junction diode in forward and reverse bias.

19. Characteristic curves of a Zener diode and finding reverse break down voltage.

20. Characteristic curves of a transistor and finding current gain and voltage gain.

21. Identification of Diode, LED, Transistor, IC, Resistor, Capacitor from mixed collection of such items.

22. Using multimeter to:

- (i) Identify base of a transistor
- (ii) Distinguish between npn and pnp type transistor
- (iii) See the unidirectional flow of current in case of a diode and an LED.
- (iv) Check the correctness or otherwise of a given electronic component (diode, transistor or IC).

Section B:

Chemistry (25 marks)

Unit 1: Some Basic Concepts in Chemistry

Matter and its nature, Dalton's atomic theory; Concept of atom, molecule, element and compound; Physical quantities and their measurements in Chemistry, precision and accuracy, significant figures, S.I. Units, dimensional analysis; Laws of chemical combination; Atomic and molecular masses, mole concept, molar mass, percentage composition, empirical and molecular formulae; Chemical equations and stoichiometry.

Unit 2: States of Matter

Classification of matter into solid, liquid and gaseous states.

Gaseous State:

Measurable properties of gases; Gas laws - Boyle's law, Charles's law, Graham's law of diffusion, Avogadro's law, Dalton's law of partial pressure; Concept of Absolute scale of temperature; Ideal gas equation, Kinetic theory of gases (only postulates); Concept of average, root mean square and most probable velocities; Real gases, deviation from Ideal behaviour, compressibility factor, van der Waals equation, liquefaction of gases, critical constants.

Liquid State:

Properties of liquids - vapour pressure, viscosity and surface tension and effect of temperature on them (qualitative treatment only).

Solid State:

Classification of solids: molecular, ionic, covalent and metallic solids, amorphous and crystalline solids (elementary idea); Bragg's Law and its applications; Unit cell and lattices, packing in solids (fcc, bcc and hcp lattices), voids, calculations involving unit cell parameters, imperfection in solids; Electrical, magnetic and dielectric properties.

Unit 3: Atomic Structure

Discovery of sub-atomic particles (electron, proton and neutron); Thomson and Rutherford atomic models and their limitations; Nature of electromagnetic radiation, photoelectric effect; Spectrum of hydrogen atom, Bohr model of hydrogen atom - its postulates, derivation of the relations for energy of the electron and radii of the different orbits, limitations of Bohr's model; Dual nature of matter, de-Broglie's relationship, Heisenberg uncertainty principle. Elementary ideas of quantum mechanics, quantum mechanical model of atom, its important features, ψ and ψ^2 , concept of atomic orbitals as one electron wave functions; Variation of ψ and ψ^2 with r for 1s and 2s orbitals; various quantum numbers (principal, angular momentum and magnetic quantum numbers) and their significance; shapes of s, p and d - orbitals, electron spin and spin quantum number; Rules for filling electrons in orbitals - Aufbau principle, Pauli's exclusion principle and Hund's rule,

electronic configuration of elements, extra stability of half-filled and completely filled orbitals.

Unit 4: Chemical Bonding and Molecular Structure

Kossel - Lewis approach to chemical bond formation, concept of ionic and covalent bonds.

Ionic Bonding: Formation of ionic bonds, factors affecting the formation of ionic bonds; calculation of lattice enthalpy.

Covalent Bonding: Concept of electronegativity, Fajan's rule, dipole moment; Valence Shell Electron Pair Repulsion (VSEPR) theory and shapes of simple molecules.

Quantum mechanical approach to covalent bonding: Valence bond theory - Its important features, concept of hybridization involving s, p and d orbitals; Resonance.

Molecular Orbital Theory - Its important features, LCAOs, types of molecular orbitals (bonding, antibonding), sigma and pi-bonds, molecular orbital electronic configurations of homonuclear diatomic molecules, concept of bond order, bond length and bond energy. Elementary idea of metallic bonding. Hydrogen bonding and its applications.

Unit 5: Chemical Thermodynamics

Fundamentals of thermodynamics: System and surroundings, extensive and intensive properties, state functions, types of processes.

First law of thermodynamics - Concept of work, heat internal energy and enthalpy, heat capacity, molar heat capacity; Hess's law of constant heat summation; Enthalpies of bond dissociation, combustion, formation, atomization, sublimation, phase transition, hydration, ionization and solution.

Second law of thermodynamics- Spontaneity of processes; DS of the universe and DG of the system as criteria for spontaneity, DGo (Standard Gibbs energy change) and equilibrium constant.

Unit 6: Solutions

Different methods for expressing concentration of solution - molality, molarity, mole fraction, percentage (by volume and mass both), vapour pressure of solutions and Raoult's Law - Ideal and non-ideal solutions, vapour pressure - composition, plots for ideal and non-ideal solutions; Colligative properties

of dilute solutions - relative lowering of vapour pressure, depression of freezing point, elevation of boiling point and osmotic pressure; Determination of molecular mass using colligative properties; Abnormal value of molar mass, van't Hoff factor and its significance.

Unit 7: Equilibrium

Meaning of equilibrium, concept of dynamic equilibrium.

Equilibria involving physical processes: Solid -liquid, liquid - gas and solid - gas equilibria, Henry's law, general characteristics of equilibrium involving physical processes.

Equilibria involving chemical processes: Law of chemical equilibrium, equilibrium constants (K_p and K_c) and their significance, significance of DG and DGo in chemical equilibria, factors affecting equilibrium concentration, pressure, temperature, effect of catalyst; Le Chatelier's principle.

Ionic equilibrium: Weak and strong electrolytes, ionization of electrolytes, various concepts of acids and bases (Arrhenius, Brensted - Lowry and Lewis) and their ionization, acid - base equilibria (including multistage ionization) and ionization constants, ionization of water, pH scale, common ion effect, hydrolysis of salts and pH of their solutions, solubility of sparingly soluble salts and solubility products, buffer solutions.

Unit 8: Redox Reactions and Electrochemistry

Electronic concepts of oxidation and reduction, redox reactions, oxidation number, rules for assigning oxidation number, balancing of redox reactions.

Electrolytic and metallic conduction, conductance in electrolytic solutions, specific and molar conductivities and their variation with concentration: Kohlrausch's law and its applications.

Electrochemical cells - Electrolytic and Galvanic cells, different types of electrodes, electrode potentials including standard electrode potential, half - cell and cell reactions, emf of a Galvanic cell and its measurement; Nernst equation and its applications; Relationship between cell potential and Gibbs' energy change; Dry cell and lead accumulator; Fuel cells; Corrosion and its prevention.

Unit 9: Chemical Kinetics

Rate of a chemical reaction, factors affecting the rate of reactions: concentration, temperature, pressure and catalyst; elementary and complex reactions, order and molecularity of reactions, rate law,

rate constant and its units, differential and integral forms of zero and first order reactions, their characteristics and half - lives, effect of temperature on rate of reactions - Arrhenius theory, activation energy and its calculation, collision theory of bimolecular gaseous reactions (no derivation).

Unit 10: Surface Chemistry

Adsorption- Physisorption and chemisorption and their characteristics, factors affecting adsorption of gases on solids - Freundlich and Langmuir adsorption isotherms, adsorption from solutions.

Catalysis - Homogeneous and heterogeneous, activity and selectivity of solid catalysts, enzyme catalysis and its mechanism.

Colloidal state - distinction among true solutions, colloids and suspensions, classification of colloids - lyophilic, lyophobic; multi molecular, macromolecular and associated colloids (micelles), preparation and properties of colloids - Tyndall effect, Brownian movement, electrophoresis, dialysis, coagulation and flocculation; Emulsions and their characteristics

Unit 11: Classification of Elements and Periodicity in Properties

Modern periodic law and present form of the periodic table, s, p, d and f block elements, periodic trends in properties of elements atomic and ionic radii, ionization enthalpy, electron gain enthalpy, valence, oxidation states and chemical reactivity.

Unit 12: General Principles and Processes of Isolation of Metals

Modes of occurrence of elements in nature, minerals, ores; steps involved in the extraction of metals - concentration, reduction (chemical and electrolytic methods) and refining with special reference to the extraction of Al, Cu, Zn and Fe; Thermodynamic and electrochemical principles involved in the extraction of metals.

Unit 13: Hydrogen

Position of hydrogen in periodic table, isotopes, preparation, properties and uses of hydrogen; Physical and chemical properties of water and heavy water; Structure, preparation, reactions and uses of hydrogen peroxide; Classification of hydrides - ionic, covalent and interstitial; Hydrogen as a fuel

Unit 14: S-Block elements(Alkali and Alkaline Earth materials)

Group - 1 and 2 Elements

General introduction, electronic configuration and general trends in physical and chemical properties of elements, anomalous properties of the first element of each group, diagonal relationships.

Preparation and properties of some important compounds - sodium carbonate, sodium chloride, sodium hydroxide and sodium hydrogen carbonate; Industrial uses of lime, limestone, Plaster of Paris and cement; Biological significance of Na, K, Mg and Ca.

Unit 15: P-Block Elements

Group - 13 to Group 18 Elements

General Introduction: Electronic configuration and general trends in physical and chemical properties of elements across the periods and down the groups; unique behaviour of the first element in each group.

Groupwise study of the p – block elements

Group - 13

Preparation, properties and uses of boron and aluminium; Structure, properties and uses of borax, boric acid, diborane, boron trifluoride, aluminium chloride and alums.

Group - 14

Tendency for catenation; Structure, properties and uses of allotropes and oxides of carbon, silicon tetrachloride, silicates, zeolites and silicones.

Group - 15

Properties and uses of nitrogen and phosphorus; Allotropic forms of phosphorus; Preparation, properties, structure and uses of ammonia, nitric acid, phosphine and phosphorus halides, (PCl_2 , PCl_3); Structures of oxides and oxoacids of nitrogen and phosphorus.

Group - 16

Preparation, properties, structures and uses of dioxygen and ozone; Allotropic forms of sulphur; Preparation, properties, structures and uses of sulphur dioxide, sulphuric acid (including its industrial preparation); Structures of oxoacids of sulphur.

Group - 17

Preparation, properties and uses of chlorine and hydrochloric acid; Trends in the acidic nature of hydrogen halides; Structures of Interhalogen compounds and oxides and oxoacids of halogens.

Group -18

Occurrence and uses of noble gases; Structures of fluorides and oxides of xenon.

Unit 16: d and f block elements

Transition Elements - General introduction, electronic configuration, occurrence and characteristics, general trends in properties of the first row transition elements - physical properties, ionization enthalpy, oxidation states, atomic radii, colour, catalytic behaviour, magnetic properties, complex formation, interstitial compounds, alloy formation; Preparation, properties and uses of $K_2Cr_2O_7$ and $KMnO_4$.

Inner Transition Elements Lanthanoids - Electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction.

Actinoids - Electronic configuration and oxidation states.

Unit 17: Co-ordination Compounds

Introduction to co-ordination compounds, Werner's theory; ligands, co-ordination number, denticity, chelation; IUPAC nomenclature of mononuclear co-ordination compounds, isomerism; Bonding-Valence bond approach and basic ideas of Crystal field theory, colour and magnetic properties; Importance of co-ordination compounds (in qualitative analysis, extraction of metals and in biological systems).

Unit 18: Environmental Chemistry

Environmental pollution - Atmospheric, water and soil.

Atmospheric pollution - Tropospheric and stratospheric

Tropospheric pollutants - Gaseous pollutants: Oxides of carbon, nitrogen and sulphur, hydrocarbons; their sources, harmful effects and prevention; Green house effect and Global warming; Acid rain;

Particulate pollutants: Smoke, dust, smog, fumes, mist; their sources, harmful effects and prevention.

Stratospheric pollution- Formation and breakdown of ozone, depletion of ozone layer - its mechanism and effects.

Water Pollution - Major pollutants such as, pathogens, organic wastes and chemical pollutants; their harmful effects and prevention.

Soil pollution - Major pollutants such as: Pesticides (insecticides, herbicides and fungicides), their harmful effects and prevention.

Strategies to control environmental pollution.

Unit 19: Purification and Characterisation of Organic Compounds

Purification - Crystallization, sublimation, distillation, differential extraction and chromatography - principles and their applications.

Qualitative analysis - Detection of nitrogen, sulphur, phosphorus and halogens.

Quantitative analysis (basic principles only) - Estimation of carbon, hydrogen, nitrogen, halogens, sulphur, phosphorus.

Calculations of empirical formulae and molecular formulae; Numerical problems in organic quantitative analysis.

Unit 20: Some Basic Principles of Organic Chemistry

Tetravalency of carbon; Shapes of simple molecules - hybridization (s and p); Classification of organic compounds based on functional groups: $-C=C-$, $-C\equiv C-$ and those containing halogens, oxygen, nitrogen and sulphur; Homologous series; Isomerism - structural and stereoisomerism.

Nomenclature (Trivial and IUPAC)

Covalent bond fission - Homolytic and heterolytic: free radicals, carbocations and carbanions; stability of carbocations and free radicals, electrophiles and nucleophiles.

Electronic displacement in a covalent bond - Inductive effect, electromeric effect, resonance and hyperconjugation.

Common types of organic reactions - Substitution, addition, elimination and rearrangement.

Unit 21: Hydrocarbons

Classification, isomerism, IUPAC nomenclature, general methods of preparation, properties and reactions.

Alkanes - Conformations: Sawhorse and Newman projections (of ethane); Mechanism of halogenation of alkanes.

Alkenes - Geometrical isomerism; Mechanism of electrophilic addition: addition of hydrogen, halogens, water, hydrogen halides (Markownikoff's and peroxide effect); Ozonolysis, oxidation, and

polymerization.

Alkynes - Acidic character; Addition of hydrogen, halogens, water and hydrogen halides; Polymerization.

Aromatic hydrocarbons - Nomenclature, benzene - structure and aromaticity; Mechanism of electrophilic substitution: halogenation, nitration, Friedel – Craft's alkylation and acylation, directive influence of functional group in mono-substituted benzene

Unit 22: Organic Compounds containing Halogens

General methods of preparation, properties and reactions; Nature of C-X bond; Mechanisms of substitution reactions.

Uses; Environmental effects of chloroform, iodoform, freons and DDT.

Unit 23: Organic compounds containing Oxygen

General methods of preparation, properties, reactions and uses.

ALCOHOLS, PHENOLS AND ETHERS

Alcohols: Identification of primary, secondary and tertiary alcohols; mechanism of dehydration.

Phenols: Acidic nature, electrophilic substitution reactions: halogenation, nitration and sulphonation, Reimer - Tiemann reaction.

Ethers: Structure.

Aldehyde and Ketones: Nature of carbonyl group;

Nucleophilic addition to $>C=O$ group, relative reactivities of aldehydes and ketones; Important reactions such as - Nucleophilic addition reactions (addition of HCN, NH_3 and its derivatives), Grignard reagent; oxidation; reduction (Wolff Kishner and Clemmensen); acidity of - hydrogen, aldol condensation, Cannizzaro reaction, Haloform reaction; Chemical tests to distinguish between aldehydes and Ketones.

CARBOXYLIC ACIDS

Acidic strength and factors affecting it.

Unit 24: Organic compounds containing Nitrogen

General methods of preparation, properties, reactions and uses.

Amines: Nomenclature, classification, structure, basic character and identification of primary, secondary and tertiary amines and their basic character.

Diazonium Salts: Importance in synthetic organic chemistry.

Unit 25: Polymers

General introduction and classification of polymers, general methods of polymerization - addition and condensation, copolymerization; Natural and synthetic rubber and vulcanization; some important polymers with emphasis on their monomers and uses - polythene, nylon, polyester and Bakelite

Unit 26: Biomolecules

General introduction and importance of biomolecules.

CARBOHYDRATES - Classification: aldoses and ketoses; monosaccharides (glucose and fructose), constituent monosaccharides of oligosaccharides (sucrose, lactose, maltose) and polysaccharides (starch, cellulose, glycogen).

PROTEINS - Elementary Idea of - amino acids, peptide bond, polypeptides; Proteins: primary, secondary, tertiary and quaternary structure (qualitative idea only), denaturation of proteins, enzymes.

VITAMINS - Classification and functions.

NUCLEIC ACIDS - Chemical constitution of DNA and RNA.

Biological functions of nucleic acids.

Unit 27: Chemistry in Everyday Life

Chemicals in medicines - Analgesics, tranquilizers, antiseptics, disinfectants, antimicrobials, antifertility drugs, antibiotics, antacids, antihistamins - their meaning and common examples.

Chemicals in food - Preservatives, artificial sweetening agents - common examples.

Cleansing agents - Soaps and detergents, cleansing action.

Unit 28: Principles related to Practical Chemistry

• Detection of extra elements (N,S, halogens) in organic compounds; Detection of the following functional groups:

hydroxyl (alcoholic and phenolic), carbonyl (aldehyde and ketone), carboxyl and amino groups in organic compounds.

- Chemistry involved in the preparation of the following:

Inorganic compounds: Mohr's salt, potash alum.

Organic compounds: Acetanilide, p-nitroacetanilide, aniline yellow, iodoform.

- Chemistry involved in the titrimetric exercises - Acids bases and the use of indicators, oxalic-acid vs KMnO_4 , Mohr's salt vs KMnO_4 .

- Chemical principles involved in the qualitative salt analysis:

Cations - Pb^{2+} , Cu^{2+} , Al^{3+} , Fe^{3+} , Zn^{2+} , Ni^{2+} , Ca^{2+} , Ba^{2+} , Mg^{2+} , NH_4^+ .

Anions- CO_3^{2-} , S^{2-} , SO_4^{2-} , NO^{2-} , NO_3^- , Cl^- , Br^- , I^- . (Insoluble salts excluded).

- Chemical principles involved in the following experiments:

1. Enthalpy of solution of CuSO_4
2. Enthalpy of neutralization of strong acid and strong base.
3. Preparation of lyophilic and lyophobic sols.
4. Kinetic study of reaction of iodide ion with hydrogen peroxide at room temperature.

Section C: Mathematics (50 marks)

Unit 1: Sets, Relations and Functions

Sets and their representation; Union, intersection and complement of sets and their algebraic properties; Power set; Relation, Types of relations, equivalence relations, functions; one-one, into and onto functions, composition of functions.

Unit 2: Complex Numbers and Quadratic Equations

Complex numbers as ordered pairs of reals, Representation of complex numbers in the form $a+ib$ and their representation in a plane, Argand diagram, algebra of complex numbers, modulus and argument (or amplitude) of a complex number,

square root of a complex number, triangle inequality, Quadratic equations in real and complex number system and their solutions. Relation between roots and co-efficients, nature of roots, formation of quadratic equations with given roots.

Unit 3: Matrices and Determinants

Matrices, algebra of matrices, types of matrices, determinants and matrices of order two and three. Properties of determinants, evaluation of determinants, area of triangles using determinants. Adjoint and evaluation of inverse of a square matrix using determinants and elementary transformations, Test of consistency and solution of simultaneous linear equations in two or three variables using determinants and matrices.

Unit 4: Permutations and Combinations

Fundamental principle of counting, permutation as an arrangement and combination as selection, Meaning of $P(n,r)$ and $C(n,r)$, simple applications

Unit 5: Mathematical Induction

Principle of Mathematical Induction and its simple applications.

Unit 6: Binomial Theorem and Its Applications

Binomial theorem for a positive integral index, general term and middle term, properties of Binomial coefficients and simple applications.

Unit 7: Sequence and Series

Arithmetic and Geometric progressions, insertion of arithmetic, geometric means between two given numbers. Relation between A.M. and G.M. Sum upto n terms of special series: S_n , S_n^2 , S_n^3 . Arithmetico - Geometric progression

Unit 8: Limit, Continuity and Differentiability

Real - valued functions, algebra of functions, polynomials, rational, trigonometric, logarithmic and exponential functions, inverse functions. Graphs of simple functions. Limits, continuity and differentiability. Differentiation of the sum, difference, product and quotient of two functions. Differentiation of trigonometric, inverse trigonometric, logarithmic, exponential, composite and implicit functions; derivatives of order upto two. Rolle's and Lagrange's Mean Value Theorems. Applications of derivatives: Rate of change of quantities, monotonic - increasing and decreasing functions, Maxima and minima of functions of one variable, tangents and

normals.

Unit 9: Integral Calculus

Integral as an anti - derivative. Fundamental integrals involving algebraic, trigonometric, exponential and logarithmic functions. Integration by substitution, by parts and by partial fractions. Integration using trigonometric identities.

Evaluation of simple integrals of the type

$$\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \int \frac{dx}{a^2 - x^2}, \int \frac{dx}{\sqrt{a^2 - x^2}}, \int \frac{dx}{ax^2 + bx + c}$$

$$\int \frac{dx}{\sqrt{ax^2 + bx + c}}, \int \frac{(px+q)dx}{ax^2 + bx + c}, \int \frac{(px+q)dx}{\sqrt{ax^2 + bx + c}}$$

$$\int \sqrt{a^2 \pm x^2} dx \quad \int \sqrt{x^2 - a^2} dx$$

Integral as limit of a sum. Fundamental Theorem of Calculus. Properties of definite integrals. Evaluation of definite integrals, determining areas of the regions bounded by simple curves in standard form.

Unit 10: Differential Equations

Ordinary differential equations, their order and degree. Formation of differential equations. Solution of differential equations by the method of separation of variables, solution of homogeneous and linear differential equations of the type: $\frac{dy}{dx} + p(x)y = q(x)$

Unit 11: Coordinate Geometry

Cartesian system of rectangular co-ordinates in a plane, distance formula, section formula, locus and its equation, translation of axes, slope of a line, parallel and perpendicular lines, intercepts of a line on the coordinate axes.

Straight lines

Various forms of equations of a line, intersection of lines, angles between two lines, conditions for concurrence of three lines, distance of a point from a line, equations of internal and external bisectors of angles between two lines, coordinates of centroid, orthocentre and circumcentre of a triangle, equation of family of lines passing through the point of intersection of two lines.

Circles, conic sections

Standard form of equation of a circle, general form of the equation of a circle, its radius and centre, equation of a circle when the end points of a diameter are given, points of intersection of a line and a circle with the centre at the origin and condition for a line to be tangent to a circle, equation of the tangent. Sections of cones, equations of conic sections (parabola, ellipse and hyperbola) in standard forms, condition for $y = mx + c$ to be a tangent and point (s) of tangency.

Unit 12: Three Dimension Geometry

Coordinates of a point in space, distance between two points, section formula, direction ratios and direction cosines, angle between two intersecting lines. Skew lines, the shortest distance between them and its equation. Equations of a line and a plane in different forms, intersection of a line and a plane, coplanar lines.

Unit 13: Vector Algebra

Vectors and scalars, addition of vectors, components of a vector in two dimensions and three dimensional space, scalar and vector products, scalar and vector triple product.

Unit 14: Statistics and Probability

Measures of Dispersion: Calculation of mean, median, mode of grouped and ungrouped data. Calculation of standard deviation, variance and mean deviation for grouped and ungrouped data.

Probability: Probability of an event, addition and multiplication theorems of probability, Baye's theorem, probability distribution of a random variate, Bernoulli trials and Binomial distribution.

Unit 15: Trigonometry

Trigonometrical identities and equations. Trigonometrical functions. Inverse trigonometrical functions and their properties. Heights and Distances

Unit 16: Mathematical Reasoning

Statements, logical operations and, or, implies, implied by, if and only if. Understanding of tautology, contradiction, converse and contrapositive.

Section E: English (25 marks)

Word Formation, Vocabulary extension.

Elements of Grammar: Sentence elements, parts of speech, stative and dynamic, Pro-forms, question and negation, tag question.

Verbs and the verb phrases, appropriate preposition.

Articles and determiners, Revision of Present, Past and future tenses, Punctuations, Types of sentences, Structure of sentences, word order.

CIT LATERAL ENTRANCE TEST 2014

31. Format & Syllabi of CITLET2014

First Paper: Common Paper (Marks – 60, Time – 1 hour 30 mins): Common Paper will be compulsory and consists of the subjects: (a) Physics – 10 marks (b) Chemistry – 10 marks (c) Mathematics – 20 marks (d) Graphics – 10 marks (e) Computer and General Awareness – 5 marks and (f) English – 5 marks. The standard of the paper will be that of 1st year of the B.Tech course.

Physics: Work, Power, Energy, Friction, Viscosity, Electricity, Hydrostatics, Basics of optics, Laws of motion, Heat.

Chemistry: Gas Laws, Thermodynamics, Electro Chemistry, Chemical Kinetics, Benzene and derivatives, Aldehydes and Ketens, Hydro carbons, Acids & Alcohols

Mathematics: Matrices, Determinants, Differential & Integral Calculus, Inverse Trigonometric Functions, Binomial Theorem, Probability, Statics, Plane Coordinate Geometry, ordinary Differential Equations.

English: Grammar & Composition.

Graphics: Scale, Orthographic projection including sectional view, Isometric view, free hand sketch.

Second Paper: Branch Papers (Marks – 40, Time – 1 hour): The Branch papers will be separate for the six branches of Engineering of the Institute. This paper will be of the standard of Diploma Course of the concerned branch. The syllabi for branch papers for the six branches are given below.

(a) Electronics and Communication Engineering

- 1. Materials and Components:** Structure and properties of Electrical Engineering materials: Conductors, Semiconductors and Insulators, Magnetic, Ferroelectric, Piezoelectric, Ceramic, Optical and Super conducting materials. Passive components and characteristics Resistors, Capacitors and Inductors; Ferrites, Quartz crystal Ceramic resonators, Electromagnetic and Electromechanical components.
- 2. Physical Electronics Electron Devices and ICs:** Electrons and holes in semiconductors, Carrier Statistics, Mechanism of current flow in a semiconductor, working principle and basic structure of BJTs and FETs.
- 3. Network Theory:** Network analysis, Loop Analysis, Mesh Analysis; Network Theorems, Superposition Theorem, Thevenin's Theorem, Norton's Theorem, Reciprocity Theorem, Millman's Theorem, Star-Delta Connections, Two port networks.
- 4. Electronic Measurements and Instrumentation:** Basic concepts, standards and error analysis; Measurements of basic electrical quantities and parameters; Electronic measuring instruments and their principles of working; analog and digital, comparison, characteristics, application Transducers; Electronic measurements of non electrical quantities like temperature, pressure, humidity, etc.
- 5. Analog Electronic Circuits:** Transistors biasing and stabilization, small signal analysis, power amplifiers, frequency response, wide banding techniques, feedback amplifiers, Tuned amplifiers, Oscillators, Rectifiers and power supplies, Op Amp.
- 6. Digital Electronic Circuits:** Binary number system, Octal, Hexadecimal and BCD numbers system, Boolean algebra, simplification of Boolean functions, Karnaugh map and applications, IC logic, Combination logic circuits, Half adder, Full adder, Digital comparator, Multiplexer, Demultiplexer, Flip Flops, R-S, J-K, D and T flip-flops, different types of counters and registers, A/D and D/A converters, semiconductor memories.
- 7. Control Systems:** Types of Control system, Open Loop and Closed Loop Control system, Effect of feedback on stability and sensitivity; Block Diagram Reduction Technique, Signal Flow Graph, Stability Analysis, Routh's Stability Criterion.

8. Communication System: Basic Mathematical Tools like Fourier Series, Modulation and detection in analogue and digital system; Sampling and data reconstructions; Propagation of signals at HF, VHF, UHF and microwave frequency.

9. Computer Engineering: Number system, Data representation; Programming; Elements of a high level programming language PASCAL/C; Use of basic data structures, Fundamentals of computer architecture, processor design, control unit design, memory organization, I/O system organization, microprocessors, architecture and instruction set of microprocessors 8085, Assembly language programming.

(b) Computer Science Engineering.

1. Programming Languages C, C++ : Data types, variables, operators, expressions, input-output operators, control structure, functions, storage classes, array, pointers, structures, Unions, file handling, concepts of OOP, Data types, Operators, Functions, Classes, Objects, Constructor, Destructor Operator overloading, Function overloading, Inheritance, Polymorphism.

2. Digital Structure and Operating Systems: Time and space complexity, Array, String, Stack, Queue, Linked List, Tree, Graph, Different sorting and searching techniques, Concepts regarding Batch systems, Multiprogrammed system, Time sharing systems, distributed systems, Real time system, Process, CPU scheduling, Synchronisation Dead Lock, Memory management, Virtual memory.

3. Digital Electronics & Microprocessor: Numbering system, different coding methods, Boolean algebra, logic gates, minimization techniques, combinational logic design, Flip flops, sequential logic design i.e. counter & shift registers, Pin Diagram and Block Diagram of 8085 microprocessors, Timing diagram, Instruction set Addressing modes, Assembly language programming, Interfacing peripheral devices.

4. Computer Organisation & Architecture: Basic organization of computer, classification of computer, Introduction to compiler, Interpreter, Loader, Linker, Design of functional units like ALU & CU, Memory organization – Types of memory, RAM, ROM, Cache memory, Mapping functions, secondary memory, Virtual memory. Input-output organization. Methods of interfacing. Address-space partitioning, Data transfer technique, Interrupts.

5. Computer Network and DBMS: OSI Reference Model, TCP/IP Model, Network Topologies, Transmission media, Switching, Multiplexing, Error Detection & Correction, IEEE LAN standards, Routing methods. Introduction to database, Advantages of database, Different models – Relational, Hierarchical, Network, E-R models, Relational algebra, Calculus, Normal forms, SQL query.

(c) Instrumentation Engineering

1. Network Theory: Network analysis techniques, Nodal Analysis, Loop Analysis, Mesh Analysis; Network Theorems; Superposition Theorem, Thevenin's Theorem, Norton's Theorem, Reciprocity Theorem, Mollman's Theorem, Star-Delta Connections, Two port networks.

2. Electronic Measurements and Instrumentation: Basic concepts, standards and error analysis; Measurements of basic electrical quantities and parameters; Electronic measuring instruments and their principles of working; analog and digital, comparison, characteristics, application Transducers; Electronic measurements of non electrical quantities like temperature, pressure, humidity, etc.

3. Analog Electronic Circuits: Transistors biasing and stabilization, small signal analysis, power amplifiers, frequency response, wide banding techniques, feedback amplifiers, Tuned amplifiers, Oscillators, Rectifiers and power supplies, Op Amp.

4. Digital Electronic Circuits: Binary number system, Octal, Hexadecimal and BCD numbers system, Boolean algebra, simplification of Boolean functions, Karnaugh map and applications, IC logic, Combination logic circuits, Half adder, Full adder, Digital comparator, Multiplexer, Demultiplexer, Flip Flops, R-S, J-K, D and T flip-flops, different types of counters and registers, A/D and D/A converters, semiconductor memories.

5. Control Systems: Types of Control system, Open Loop and Closed Loop Control system, Effect of feedback on stability and sensitivity; Block Diagram Reduction Technique, Signal Flow Graph, Stability Analysis, Routh's Stability Criterion.

6. Microprocessors: Number systems, Data representation; microprocessors; Architecture and Instruction set of Microprocessors 8085, Assembly language programming.

(d) **Food Processing Technology**

1. **Engineering Thermodynamics:** Zeroth law, first law, second law. Concepts of enthalpy, internal energy, entropy and absolute temperature. Properties of pure substances and mixtures, reversibility and irreversibility. Thermodynamics cycles. Refrigeration and air conditioning: Refrigeration cycles, heat pump. Application of refrigeration in food processing and preservation. Food freezing systems. Steam: steam generation, steam properties and application. Psychrometrics: properties of air water vapour mixer; psychrometric properties, charts and relations and psychro metric calculations.
2. **Heat and Mass Transfer:** Principles of heat and mass transfer to heat, different methods of heat transfer, Fourier's Law, Steady state heat transfer through plain and composite slabs, cylindrical and spherical surfaces. Natural and forced convection, concept of overall heat transfer coefficient, LMTD, heat exchangers in food processing, effectiveness of heat exchanger. Fick's Law of diffusion and basic concepts of convective mass transfer.
3. **Basic Fluid Mechanics :** Physical properties of fluids, classification of fluid flow, continuity equations, Bernoulli's equation and its application, steady state flow equation, concept of viscosity, Newtonian and non-Newtonian fluids. Poiseuille's equation. Navier Stoke's equation, flow through parallel plates and circular pipes. Concept of Reynold's number and its application. Pipe and pipe flow, fittings. Pumps, types of pumps and their application and selection.
4. **Food Engineering Operations:** Materials and introduction energy balance for food engineering processes. Size eduction, mechanical expression, mechanical separation, mixing and agitation, emulsification and homogenization. Filtration, membrane separation, sedimentation, centrifugation, crystallization, extraction, distillation, absorption, humidification and dehumidification. Thermal processing of foods, Food concentration: Evaporation, equipments, their selection and calculation. Freeze concentration. Drying and dehydration methods, different kinds of dryers, their selection and design.
5. **Food Microbiology:** Microbiology and reproduction of bacteria. Pure culture technique: serial dilution, pour plate,

streak plate, spread plate, slant, broth and enrichment culture, lyophilization. Microbial Growth: Definition, Growth curve, account of different phases, synchronous growth, doubling/generation time. Relationship between number of generations and total number of microbes. Disinfecting agents and its dynamics. Enzymes, specificity of enzymes, coenzymes, cofactors, Enzymes inhibitors and activators. Applications of enzymes in food industry, immobilized enzymes. Definition, scope and present status of Biotechnology and its applications, Microbial propagation and production of SCP, Fermentation: Fermented and non Fermented food, cereal fermentation.

6. **Food Chemistry:** Importance of different food constituent, Carbohydrate and its classification and functions. Proteins, classification and properties of amino acids. Lipids structure, physical and chemical properties. Vitamins and minerals in food. Food spoilage: Types and factors, Food enzymes,
7. **Food preservation techniques:** Addition of salt, sugar, oil, spices, preservative, drying, evaporation, heat treatment, irradiation, refrigeration, freezing, plant physiology: Transpiration, Ripening, Senescence, Post-Harvest technology and its importance, Climacteric and non-climacteric fruits.
8. **Food Product technology:** Parboiling, Milling of rice, wheat, malting, storage atmospheres: Quality control and quality assurance, different quality attributes: qualitative, hidden and sensory, HACCP and its application, Food adulteration: types, Estimation of moisture, crude, fat, proteins, crude fibre, ash, sampling and its types, BIS, AGMARK, FPA, PFA, FAO

(e) **CIVIL ENGINEERING (CONSTRUCTION TECHNOLOGY)**

Unit I: Construction Materials

Bricks: Manufacturing processes, classification and tests. Flooring and roofing tiles. Production, properties and uses of lime; cement and sand-mortar. Concrete: Plain and reinforced, Timber: types and methods of preservation, plywood, Iron and structural steel, Types and uses of paints, varnishes and distemper. Sound and heat insulating materials; Glasses; plastics and asphaltic materials.

Unit II: Surveying

Introduction to surveying, chain surveying, Compass surveying, Leveling, Contouring, Theodolite, Traversing, Total Station Survey, Tacheometry, Curves, Plane Table Surveying, Trigonometrical leveling.

Unit III: Strength of Materials

Concept of Stress & Strain, normal & shearing stress and strains, stress-strain relationship, torsion of circular shafts. Column's-Euler formula, Rankine and Secant formulae, Relationships between load, shearing force and bending moment, shear force and bending moment diagrams, Theory of simple bending stresses in beams, Bending and shear stress distribution over cross-sections of determinate beams. Principal stress and strain, principal planes, mohr's circle of stresses and strain and related problems.

Unit IV: Structural Analysis

Three Hinged Arch, Cables and Suspension Bridges, Influence Line Diagram for Reaction, Shear, Bending Moment and their maximum & minimum values for determinate beams, arches and trusses, Deflections by moment- area, conjugate beam and energy methods. Degree of indeterminacy and stability, Principles of superposition, Betti's law, Castigliano's theorems, Analysis of indeterminate beams by strain- energy and virtual work methods.

Unit IV: Concrete Technology

Concrete: Importance, Production of concrete, operations involved, grades, Ingredients, yield of concrete, Aggregates, Cement, Water. Properties of green and hardened concrete, Rheology and mix proportioning. Admixtures, Quality Control.

Unit V: Geotechnical and Transportation Engineering

Introduction, definitions and relationships; Index properties of soils, Soil classification, Soil compaction, Permeability and Seepage, Effective stress, Stress distribution in soil mass, One dimensional consolidation, Shear strength of soils and shear tests.

Roads; Introduction, Classification of road pattern; Geometric design, Traffic control devices; Railways – Rails, sleepers, ballast; Geometrics for broad gauge, cent deficiency; points and crossing, station yard, Construction of WBM, Black top and concrete pavements including grade and base courses. Equipments used for road construction

Unit VI: Design of RCC Structures

Introduction of Design Concepts, Working Stress Method of Design, Design of Rectangular and Flanged Beams for Flexure, Design of rectangular and flanges beams for bond, shear and torsion. One-way, Two Way and Continuous slabs. Axially and Eccentrically Loaded Short Columns, axially and eccentrically loaded long

columns, Isolated Footings, Limit State Method of Design for flexure, shear, torsion and compression.

Unit VII: Design of Steel Structures

Properties of steel and rolled steel sections, Design of riveted connections, Design of welded and bolted connections, Design of tension and simple compression members, Design of compression members with splicing, lacing, and battening. Design of Beam-Column connections, Design of laterally supported beams, Column bases and foundations and Roof trusses.

Unit VIII: Fluid Mechanics

Properties of fluid, Fundamentals of fluid flow, two dimensional and three dimensional flows, Streamline, stream tube, equation of continuity. Energy equation and its applications, Fluid flow in pipes - Reynolds number, critical velocity, laminar flow, turbulent flow, shearing stresses at pipe wall, velocity distribution, loss of head for laminar flow, steady incompressible flow through simple pipe systems, Darcy - Weisbach equation, Moody diagram, simple pipe flow problems, losses of head for sudden expansion and sudden contraction, various fittings. Fluid measurements - velocity measurement, Pitot tube, coefficient of discharge, coefficient of velocity, coefficient of contraction, orifices, orifice meter, Venturimeter, time to empty tanks, weirs and notches.

(f) INFORMATION TECHNOLOGY

Unit 1: Fundamentals of Computer

History, generation, classification, von neumann architecture, Functions of the different units of computer, hardware and software, peripherals, ASCII, Unicode standards etc.

Unit 2: Digital Electronics

Binary, Octal and hexadecimal number system, Binary addition, subtraction, multiplication and division, Boolean algebra, Logic Gates, DE Morgan's Theorems, K-Map, BCD, Arithmetic circuits, Decoders, Multiplexers and De-Multiplexers, flip flops, Counters, Types of RAM/ROM.

Unit 3: Programming Language C

Constants, variables and data types, Operators and Expressions, Control Structures, Functions, Arrays, Pointers, Strings, Structure and Unions, File Handling.

Unit 4: Introduction to Databases

Architecture and structure of Database Management System, data independence, ER Diagrams, Introduction to network, hierarchical and relational model, Domain, Attributes, Tuples and Relations, Entity and referential integrity, keys, Normalization, First, Second and Third normal forms, Boyce/Codd normal form, Structured Query Language: DDL and DML statements.

Unit 5: Data Structure

Basics, Arrays, Operations on arrays with Algorithms (searching, traversing, inserting, deleting), Traversing a linked list, Searching linked list, Insertion and deletion into linked list, Application of linked lists, Doubly linked lists, Stacks, Queues, Binary Trees, Search algorithm (Linear and Binary), Sorting algorithms (Bubble Sort, Insertion Sort, Quick Sort, Selection Sort, Merge Sort, Heap Sort) and their comparisons.

Unit 6: Computer Architecture and Organization

Instruction Code, Instruction Cycle, Instruction types, Design of basic computer, Register Organization, Addressing modes, Introduction to RISC, CISC architecture, Control Unit – Hard wired and Micro programmed, Pipeline processing, Memory Hierarchy, associative memory, cache memory, virtual memory, I/O organization.

Unit 7: Data Communication and Computer Networks

LAN, MAN and WAN, OSI Model, Topologies, Basic access protocols: CSMA/CD, Token Passing, Ethernet, Error Detection, Network connectivity Devices, NICs, Hubs, Repeaters, Multiplexers, Modems, Routers and Protocols, Firewall, ATM, Different classes of IP addressing, Protocol Suites.

Unit 8: Operating System (OS)

System Software: Compiler, Assembler, Loader, linker, debugger. Definition, types and importance of Operating Systems, Memory organization, Process Management Functions, Process Scheduler, scheduling algorithms, Process synchronization, Memory Management Function, Segmentation, deadlock, Swapping, Simple Paging System, Virtual Memory, I/O Management Functions.

Unit 9: Multimedia

Multimedia hardware, sound cards, CD ROMS, full motion Digital Video.

Unit 10: Internet

Introduction to FTP, TELNET, E-mail, web browser and web servers.

32. Hostel Admission:

For hostel Admission, the candidates have to apply separately in the Application Form to be distributed on the day of counseling and submit it to the Member Secretary, Hostel Committee. The selected list will be finalized by ‘Hostel Admission Committee’ and approved by ‘The Head of Institution’. All the admitted candidates to the hostels have to furnish an undertaking of not resorting to ragging in the hostels and the Institute. A student must remember that the hostel is the home of the students in the Campus and so is expected to behave in such a manner as to bring credit to oneself and to the Institution.

The following rules have to be followed by all students residing in the hostels. Violation of hostel rules will make students liable for disciplinary actions including expulsion from the hostel.

- (i) Each student must occupy the room allotted to him/her for the session by the warden and no change of room shall be made without his/her permission.
- (ii) No student shall keep any unauthorized person in his/her room.
- (iii) In the event of mischief/foul play or accident etc. the warden can break open the room for investigation.
- (iv) Whenever the student proposes to leave station or to remain outside the hostel for the night, he/she should obtain prior permission of the warden.
- (v) No female visitor is allowed to enter the boys’ hostel and male visitor in girls’ hostel without the written permission of the respective warden.
- (vi) Students are forbidden to utilize the hostel staffs as privates or abuse them in any way.
- (vii) Electric stoves, room heaters or other electric appliances are not allowed in the hostel.
- (viii) Strictly forbidden in the hostel are:

- * Possession or use of alcoholic beverages.
 - * Possession or use of addictive or hallucinogenic drugs.
 - * Possession or use of firearms/explosives or any lethal weapons.
 - * Gambling
 - * Playing cards
 - * Loitering around unnecessarily.
- (ix) Ragging is strictly prohibited in the hostel room and compound. Ragging is a symbol of immaturity. To eliminate such incidents students of the first year are urged not to visit other hostels without the Warden's permission.
- (x) Cleanliness of the rooms is to be maintained by the student himself.
- (xi) Hostel students are not allowed to use motorized vehicles inside the Campus.
- (xii) Students should carry their Identity Card all the time and to produce the same whenever demanded by the authority.
- (xiii) Parents are especially requested to guide their wards so that their wards don't indulge in any physical violence.
- (xiv) Any point/issue not covered by these rules shall be decided by the Director.

All the students admitted into the hostels have to submit an affidavit provided in Annexure III within one month from the date of hostel admission.

33. Important Information:

10.1 Candidates should not send any photocopy of the certificates except the certificate claiming the reservation category (Caste Certificate) in case he/she belongs to any.

10.2 The appearing /appeared candidates are also allowed to appear in the Entrance Examination provisionally. However, he/she must produce the original certificates at the time of counseling. In case a candidate fails to submit the same, the candidature will be rejected.

10.3 Details of Bank Draft: Candidates who apply through the online Application Form from the CIT website: www.cit.ac.in must submit the system generated filled form along with a demand draft of Rs.800/-(eight hundred only) for GEN/OBC and Rs.400/-(four hundred only) for SC/ST/PH candidates drawn in favour of '**Entrance Examination CIT, Kokrajhar**' payable at SBI,

Balagaon, Kokrajhar (Code No. 7379). Please ensure that Demand Draft is not defective in any way. The fee is not refundable.

10.4 Admit Card and Envelope: Fill the Admit Card carefully and paste an identical passport photograph. Leave the spaces on Admit Card for Examination Centre Code, Roll No and Place of Examination. Affix a postage stamp of Rs 40/- on the envelope for admit card. You must not mutilate the Admit Card or change any entry made on it, after it has been authenticated. If a candidate does not receive the Admit card, he/she may download a copy of the same from the CIT website: www.cit.ac.in

34. Guidelines For Filling of Application Form:

Please read carefully the instructions given in this section before filling in the Application Form. To avoid mistakes and overwriting you may complete the entries item first on a plain paper, and after proper scrutiny, transfer the same onto the Application Form. The Application Form must be filled in English only. Use Capital letters except the signature. Note that only one application form is admissible. Any violation of the instruction may make your application invalid. Incomplete application form will be rejected. While filling up information in the boxes, always leave a blank between two words.

Important Terms:

Permanent Residence Certificate (PRC): All the candidates have to produce a Permanent Residence Certificate (PRC) issued by a competent authority. It is on the basis of this that admission would be granted and placed in the appropriate region which consists of BTAD, NE(Outside BTAD) or All India. If discrepancies are found in the region quoted by the candidate in the application form and that furnished in the certificate then the admission will stand cancelled. This certificate is a must and without it admission will not be done.

Caste Certificate: The candidates belonging to Scheduled Tribe (ST), Scheduled Caste (SC) and Other Backward Classes (OBC) must produce a Caste Certificate issued from such a competent authority as District Magistrate, SDO(Civil), etc. This certificate is a must during the counselling and without it admission will not be done.

Medical Certificate: The medical certificate is to be obtained from a govt. medical doctor after a general checkup which

should state that the candidate is fit to undergo a rigorous technical education and training and that there is no serious illness which would impede the normal attendance and study. A separate medical certificate from an eye specialist is to be obtained who would certify the fitness of the candidate with regards to eye sight.

Gap Certificate: If there is a gap period between the year of passing of qualifying examination and the year of admission then the candidate has to show a Gap Certificate issued by a competent authority in which the candidate was engaged during this period of stay. Such an authority may be the head of an institution if the candidate was doing a course, head of an organization if employed or a court affidavit mentioning the reasons for the gap period.

The following are the instructions:

The box for Roll No is not to be filled by the candidate. (It will be filled by office)

Para 1: Write your name in the boxes provided leaving one blank space between two words. Do not write Sri/Shri/Mr/Miss/Dr, etc. Write only the first 17 characters of your name. The appropriate bubbles should be darkened properly.

Para 2: Write your father's/guardian's name in the boxes provided leaving one blank space between two words. Do not write Sri/Shri/Mr/Miss/Dr, etc. Write only the first 17 characters of the name. The appropriate bubbles should be darkened properly.

Para 3: Write the form number provided on the right top of the application form in the boxes provided and darken the bubbles carefully.

Para 4: Write your date of birth in the format dd-mm-yy in the boxes provided and correspondingly darken the bubbles. (e.g. 1st August 2014 as 01-08-14).

Para 5: Darken the appropriate bubble corresponding to your region of permanent residence. This must be supported by a Permanent residence certificate to be produced during counseling.

Para 6: Darken the appropriate bubble corresponding to your region of the entry scheme/entrance examination.

Para 7: Darken the appropriate bubble corresponding to the category through which you claim to be admitted. Candidates

seeking admission through the reserved category must produce the certificate obtained from competent authority.

Para 8: Darken the appropriate bubble according to your status of eligibility.

Para 9: Darken the appropriate bubble corresponding to your gender.

Para 10: Darken the appropriate bubble according to your nationality.

Para 11: Darken the appropriate bubble according to your choice of entrance examination centre. Change of examination centre is usually not allowed.

Para 12: Fill your correspondence address clearly in capital letters. Fields marked with a * are compulsory.

Para 13: Fill your permanent address clearly in capital letters. Fields marked with a * are compulsory.

Para 14: Fill and put your signature. Your parent/guardian should do the same. Unsigned applications are automatically rejected.

Para 15: Do not forget to paste a recent colour photo duly attested by a Class-I gazetted Officer.

35. Check list:

After filling in the Application Form, check carefully that

- * You have filled up all Para 1 to 15 of the Application Form.
- * You have enclosed the certificate for claiming your Reservation category.
- * You have filled in the Admit Card and pasted an identical photograph as the one pasted on the Application Form.
- * You have enclosed an unattested identical photograph with your name written below.
- * You have written your Mailing Address on the envelope for sending the Admit card.
- * You have pasted a postage stamp of Rs. 40/- on the self addressed envelope for admit card.
- * You have enclosed a Demand Draft of Rs 800/- if you are GEN/OBC or Rs 400/- if you are SC/ST/PH in case the Application Form was filled online.

Annexure I:

AFFIDAVIT

(BY STUDENT)

I, Mr./Ms..... S/o D/o
Roll No..... Class..... Deptt:....., having been admitted to **Central Institute of Technology, Kokrajhar**, have carefully read and fully understood the Regulations on Curbing the Menace of Ragging in AICTE Approved Technical Institutions, which has been notified by AICTE vide F.No.37.3/Legal/AICTE/2009, dt. July 1, 2009 (available at <http://www.seti.edu.in/AICTE anti-ragging-notification>) (hereinafter called the "Regulations") and the directives of the Hon'ble Supreme Court of India.

- 1) I have, in particular, perused clause 4 of the Regulations and am aware as to what constitutes ragging and know that the ragging in any form is a punishable offence and the same is banned by the Court of Law.
- 2) That I have not been found or charged for my involvement in any kind of ragging in the past. However, I undertake to face disciplinary action/legal proceedings including expulsion from the Institute if the above statement is found to be untrue or the facts are concealed, at any stage in future.
- 3) That I shall not resort to ragging in any form at any place and shall abide by the rules/laws prescribed by the Courts, Govt. of India and the Institute authorities for the purpose from time to time.
- 4) I have also, in particular, perused clause 8, sub-clause 4 (a) of the Regulations and am fully aware of the penal and administrative action that is liable to be taken against me in case I am found guilty of or abetting ragging, actively or passively, or being part of a conspiracy to promote ragging at any stage and any place inside and outside of the institute.

Declared this _____ day of _____ month of _____ year.

Signature of deponent

Name:

Address:

Telephone/ Mobile No:

VERIFICATION

Verified that the contents of this affidavit are true to the best of my knowledge and no part of the affidavit is false and nothing has been concealed or misstated therein.

Verified at.....(place) on this the(day) of(month).....(year)

Signature of deponent

Solemnly affirmed and signed in my presence on this the (day) of (month) (year) after reading the contents of this affidavit

OATH COMMISSIONER

Annexure II:

AFFIDAVIT

(BY PARENT/GUARDIAN)

I, Mr./Mrs./Ms..... (full name of parent /guardian) father/mother/guardian of.....Roll No. (full name of student with roll number), having been admitted to **Central Institute of Technology, Kokrajhar**; have carefully read and fully understood the Regulations on Curbing the Menace of Ragging in AICTE Approved Technical Institutions, which has been notified by AICTE vide F.No.37.3/Legal/AICTE/2009, dt. July 1, 2009 (available at http://www.seti.edu.in/AICTE_anti-ragging-notification) (hereinafter called the “Regulations”) and the directives of the Hon’ble Supreme Court of India.

- 2) I have, in particular, perused clause 4 of the Regulations and am aware as to what constitutes ragging.
- 3) I have also, in particular, perused clause 8, sub-clause 4 (a) of the Regulations and am fully aware of the penal and administrative action that is liable to be taken against my ward in case he/she is found guilty of or abetting ragging, actively or passively, or being part of a conspiracy to promote ragging.
- 4) I hereby solemnly aver and undertake that
 - a) My ward will not indulge in any behavior or act that may be constituted as ragging under clause 4 of the Regulations.
 - b) My ward will not participate in or abet or propagate through any act of commission or omission that may be constituted as ragging under clause 4 of the Regulations.
- 5) I hereby affirm that, if found guilty of ragging, my ward is liable for punishment according to clause 8, sub-clause 4(a) of the Regulations, without prejudice to any other criminal action that may be taken against my ward under any penal law or any law for the time being in force.
- 6) I hereby declare that my ward has not been expelled or debarred from admission in any institution in the country on account of being found guilty of, abetting or being part of a conspiracy to promote, ragging; and further affirm that, in case the declaration is found to be untrue, the admission of my ward is liable to be cancelled.

Declared this _____ day of _____ month of _____ year.

Signature of deponent

Name:

Address:

Telephone/ Mobile No:

VERIFICATION

Verified that the contents of this affidavit are true to the best of my knowledge and no part of the affidavit is false and nothing has been concealed or misstated therein.

Verified at.....(place) on this the(day) of(month).....(year)

Signature of deponent

Solemnly affirmed and signed in my presence on this the..... (day) of(month)(year) after reading the contents of this affidavit

OATH COMMISSIONER

Annexure III

**AFFIDAVIT FOR HOSTEL
(BY STUDENT)**

I, Mr./Ms.....S/o D/o

Roll No..... Class..... Deptt:....., having been admitted to **Central Institute of Technology, Kokrajhar and taken admission in the hostel** , have carefully read and fully understood the Regulations on Curbing the Menace of Ragging in AICTE Approved Technical Institutions, which has been notified by AICTE vide F.No.37.3/Legal/AICTE/2009, dt. July 1, 2009 (available at http://www.seti.edu.in/AICTE_anti-ragging-notification) (hereinafter called the "Regulations") and the directives of the Hon'ble Supreme Court of India.

- 1) I have, in particular, perused clause 4 of the Regulations and am aware as to what constitutes ragging and know that the ragging in any form is a punishable offence and the same is banned by the Court of Law and shall be liable for any kind of action taken by the Institute authority if found involved in any such activities.
- 2) That I have not been found or charged for my involvement in any kind of ragging in the past. However, I undertake to face disciplinary action/legal proceedings including expulsion from the Institute if the above statement is found to be untrue or the facts are concealed, at any stage in future.
- 3) That I shall not resort to ragging in any form at hostel premises and shall abide by the rules/laws prescribed by the Courts, Govt. of India and all the rules and regulations framed for the hostel by the Institute authorities for the purpose from time to time.
- 4) I have also, in particular, perused clause 8, sub-clause 4 (a) of the Regulations and am fully aware of the penal and administrative action that is liable to be taken against me in case I am found guilty of or abetting ragging, actively or passively, or being part of a conspiracy to promote ragging at any stage and any place inside and outside of the hostel.

Declared this _____ day of _____ month of _____ year.

Signature of deponent

Name:

Address:

Telephone/ Mobile No:

VERIFICATION

Verified that the contents of this affidavit are true to the best of my knowledge and no part of the affidavit is false and nothing has been concealed or misstated therein.

Verified at.....(place) on this the(day) of(month).....(year)

Signature of deponent

Solemnly affirmed and signed in my presence on this the (day) of (month) (year) after reading the contents of this affidavit

OATH COMMISSIONER

Information Brochure & Application Form - 2014

CENTRAL INSTITUTE OF TECHNOLOGY, KOKRAJHAR

Annexure IV

Roll No. (to be filled by Office)

APPLICATION FORM 2014

Form No: 2749

1. Applicant's Name (leave one column blank after every part name.)

U T T A M C H A N D R A B O R O

A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J
K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K
L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
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X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z

2. Father's/Guardian's Name

K H A R G E S W A R B O R O

A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J
K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K
L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
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P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z

3. Form Number

2749

1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9
0	0	0	0	0

4. Date of Birth

010590

1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9
0	0	0	0	0

5. Region of PR

- 1. All India
- 2. North-East
- 3. BTAD

6. Entry Scheme

- 1. CITEE
- 2. CITDEE
- 3. JEE (MAINS)
- 4. CITVAD
- 5. CITLET
- 6. CITDEE & JEE
- 7. CITLET & CITVAD

7. Category

- 1. Open/General
- 2. OBC
- 3. SC
- 4. ST
- 5. PH

8. Eligibility

- 1. Appearing
- 2. Appeared
- 3. Passed

9. Gender

- 1. Male
- 2. Female

10. Nationality

- 1. Indian
- 2. Non-Indian

11. Exam. Centre

- 1. KOKRAJHAR
- 2. GUWAHATI
- 3. UDALGURI
- 4. BARAMA
- 5. KAJALGAON

12. Address for Correspondence (IN BLOCK LETTERS)

Mr./Ms. U T T A M C H A N D R A B O R O

C/O. K H A R G E S W A R B O R O Vill/Town. D A N G A G A O N

*P.O.: K A J A L G A O N *Dist.: C H I R A N G

State. A S S A M *Ph.No. 9 7 0 6 0 9 2 7 7 0

E-mail: uttambaxa@gmail.com PIN. 7 8 3 3 8 5



13. Permanent Address (IN BLOCK LETTERS)

Mr./Ms. U T T A M C H A N D R A B O R O

Father's Name. K H A R G E S W A R B O R O Vill/Town. D A N G A G A O N

*P.O.: K A J A L G A O N *Dist.: C H I R A N G

State. A S S A M *Ph.No. 9 7 0 6 0 9 2 7 7 0

*PIN 7 8 3 3 8 5

* Mandatory Fields

14. Declaration

I, Uttam Chandra Boro, hereby declare that the information furnished in this Application is true to the best of my knowledge and belief. I understand that, in case of any discrepancy detected at any stage, my candidature/admission shall be liable to be cancelled.

Parent's Signature

Date: 20/02/2014

Candidate's Signature

Date: 20/02/2014