



NATIONAL INSTITUTE OF TECHNOLOGY ROURKELA

Programme for B. Tech./ B.Arch./ M. Tech. Dual/ I. M. Sc./ M.Sc./ MA/ MBA/ M. Tech./ M. Tech (R)/ Ph.D.

MID SEMESTER EXAMINATION (2013-2014)

13-FEB-2014

Day 1 : Date / Day of Examination : 24-FEB-2014 (Monday)

FIRST SESSION (08.30 AM to 10.30 AM)		
S. No	Subject Code	Subject Name
1	BM390	Special Topics in Biotechnology and Medical Engineering (Biotechnology in Human Health)
2	BM612	Advanced Biomedical Instrumentation
3	BM652	Advanced Biochemical Engineering
4	CE214	Theory of Elasticity
5	CH338	Industrial Instrumentation and Process Control
6	CR249	Materials Science and Engineering
7	CR654	Sintering and Microstructure
8	CY611	Advanced Analytical Chemistry
9	EC440	Soft Computing Techniques
10	EC762	Advanced Wireless Communication
11	HS321	Organizational Behavior.
12	HS331	Sociology: The Science of Praxis
13	HS350	Contemporary Dance
14	HS418	Language and Writing
15	HS601	Linguistics
16	HS604	Advanced Developmental and Cultural Psychology
17	HS605	Organizational Dynamics
18	HS606	Developing and Managing Human Resources
19	HS608	Social Change
20	ID350	Robotics and Automation
21	LS538	Man and Microbes
22	LS701	Research methodology
23	MA619	Functional Analysis
24	ME300	Finite Element Analysis
25	ME450	Computational Fluid Dynamics and Heat Transfer
26	ME611	Vibration Analysis and Diagnostics
27	ME632	Machine Tool Technology
28	ME652	Heat Transfer-II: Convection Heat Transfer
29	MM318	Principles and Practice of Heat Treatment
30	MN602	Mine Management
31	PH341	Treatise of Einstein Work and Beyond

SECOND SESSION (01.30 PM to 03.30 PM)		
S. No	Subject Code	Subject Name
1	BM318	Medical Instrumentation
2	BM429	Materials in Medical Science
3	CE302	Disaster Management
4	CE610	Structural Dynamics and Earthquake Engineering
5	CE622	Stability Analysis of Slopes, Dams and Embankments
6	CE640	Analysis and Structural Design of Pavements
7	CH228	Treatment of Industrial Effluents
8	CH418	Recent Separation Technologies
9	CH632	Advanced Process Control
10	CR339	Ceramics in Electronic Applications
11	CS326	Data Communication and Computer Networks
12	CS333	Operating Systems
13	CS442	Computer System Architecture
14	CS610	Software Design
15	CS638	Pattern Recognition
16	CY202	Kinetics and Photochemistry
17	CY325	Introduction to Supra molecular Chemistry
18	CY431	Chemistry of Nano materials
19	EC200	Fundamentals of Communication Systems
20	EC320	Embedded Systems
21	EC624	Embedded Computing Systems
22	EE208	Advanced Electrical Engineering
23	EE308	Utilization of Electrical Energy
24	EE612	Advanced Machine Drives
25	EE636	System Identification and Adaptive Control
26	EE642	Wireless Communication
27	HS327	Cognitive Science
28	HS328	Sports Psychology
29	ID639	Applied Ergonomics
30	MA311	Linear Algebra
31	ME430	Industrial Management

32	PH352	X-Ray Techniques For Structure Evaluation
33	PH602	Problems in Quantum Physics
34	SM502	Human Resource Management
35	SM602	Business Ethics and Corporate Governance
36	MA624	Advanced Statistical Methods
37	PH654	Physics of Thin Film Technology

32	ME436	Entrepreneurship
33	MM358	Experimental Techniques in Materials Engineering
34	MM448	Advanced Engineering Materials
35	MM612	Phase Transformation
36	MM666	Computational Modeling of Materials
37	PH312	Physics of Quantum World
38	PH351	Science of Nano materials

Day 2 : Date / Day of Examination : 25-FEB-2014 (Tuesday)

FIRST SESSION (08.30 AM to 10.30 AM)		
S. No	Subject Code	Subject Name
1	BM312	Biomedical Instrumentation
2	BM352	Biochemical Engineering
3	BM624	Surface Engineering of Medical Implants
4	BM654	Advanced Bio separation
5	CE312	Design of Steel Structures
6	CH312	Transport Phenomena
7	CR310	Refractories Technology
8	CR420	Glass-Ceramic Technology
9	CR622	Glass and Glass Ceramic for Technical Application
10	CR624	Advanced Glasses
11	CS312	Systems Analysis and Design
12	CS412	Software Engineering
13	CS612	Software Engineering
14	CY313	Natural Products
15	CY322	Basic Inorganic Chemistry-I
16	CY512	Structure and Functions of Biomolecules
17	CY617	Special Topics in Organic Synthesis
18	EC100	Basic Electronics Engineering
19	EC312	Electromagnetic Theory
20	EE100	Basic Electrical Engineering
21	EE312	Switch Gear and Protective Devices
22	EE734	Superconducting Magnets and Devices
23	HS500	Research Methodology
24	ID312	Product Design - II
25	LS403	Immunology
26	LS708	Advanced immunology
27	LS722	Marine biotechnology
28	LS730	Food and Bioprocess Technology
29	MA402	Measure Theory

SECOND SESSION (01.30 PM to 03.30 PM)		
S. No	Subject Code	Subject Name
1	BM391	Special Topics in Biotechnology and Medical Engineering – I
2	CE418	Probability Methods in Civil Engineering
3	CE628	Earth Retaining Structures
4	CE642	Traffic Engineering and Traffic Flow Theory
5	CE650	Hydrology and Hydraulics of Surface & Sub-surface Water
6	CH426	Coal Processing Technology
7	CH626	Nano Science and Technology
8	CS615	Software Testing
9	CS620	Software Testing
10	CY514	Environmental Chemistry
11	EC439	Advanced Process Control
12	EC444	Soft Computing
13	EC626	Low Power VLSI Design
14	EC644	Soft Computing
15	EE622	Advanced Power Electronic Converters
16	EE628	Industrial Process Automation
17	EE654	Satellite Communication
18	HS534	Natural Resource Management and Sustainable Development
19	HS610	Research Methodology
20	ID444	Design for Manufacture and Assembly
21	ID651	Product Design for Manufacturing and Assembly
22	LS511	Genetics
23	LS706	Advanced molecular biology
24	LS725	Biophysics
25	MA202	Mathematics - IV
26	MA502	Functional Analysis
27	ME604	Advanced Mechatronics

30	ME330	Metal Cutting and Tool Design
31	ME612	Non-Traditional Parameter in Design
32	ME633	Modern Manufacturing Processes
33	ME653	Computational Fluid Dynamics
34	MM324	Steel Making
35	MN330	Mine Ventilation
36	MN400	Mine Planning
37	MN633	Mine Fires and Spontaneous Heating
38	PH402	Numerical Techniques in Physics
39	SM504	Production & Operations Management
40	MA622	Sampling Techniques with Applications
41	PH638	Special Topics in Condensed Matter Physics - I

28	MM416	Complex Ferrous and Non-Ferrous Alloys
29	MM619	Physical Metallurgy of Alloy Steels
30	MM622	Steel Making
31	MM642	Advances in Material Science and Engineering
32	MM646	Composite Materials
33	PH605	Experimental Techniques in Physics
34	PH662	Super fluidity and Superconductivity
35	SM614	Customer Relationship Management

Day 3 : Date / Day of Examination : 26-FEB-2014 (Wednesday)

FIRST SESSION (08.30 AM to 10.30 AM)		
S. No	Subject Code	Subject Name
1	BM314	Biomedical Image Processing
2	BM354	Bio separation
3	BM634	Advanced Biomechanics
4	BM642	Biophysics & Structural Biology
5	CE322	Geotechnical Engineering
6	CH628	Advanced Environmental Biotechnology
7	CR322	Glass Technology
8	CR610	Advanced Refractories
9	CS102	Data Structures and Algorithm
10	CS334	Operating Systems Design
11	CY323	Basic Inorganic Chemistry - II
12	CY522	Chemistry of Transition and Non-transition Elements
13	CY624	Special Topics in Inorganic Chemistry
14	EC314	Digital Communication
15	EC334	Instrumentation Devices
16	EE322	Control System - I
17	HS533	Development: Social, Anthropological and political Perspective
18	HS612	Environment and Society
19	LS404	Molecular Biology and Biotechnology
20	LS505	Food Processing Technology
21	LS530	Aquatic Biology and Marine Biotechnology
22	LS531	Epigenetics
23	LS536	RNAi, Stem cells & Onco genomics

SECOND SESSION (01.30 PM to 03.30 PM)		
S. No	Subject Code	Subject Name
1	BM254	Bioprocess Calculation
2	BM432	Bio microfluidics
3	CE252	Fluid Mechanics
4	CE452	Water Resources Engineering
5	CE614	Advanced Reinforced Concrete Design
6	CE644	Planning and Design of Airports
7	CE652	Open Channel Flow
8	CH226	Fuels and Combustion
9	CH428	Disaster Management in Chemical Industries
10	CH612	Computational Transport phenomena
11	CS242	Computer Organization and Architecture
12	CS431	Compiler Design
13	CS642	Cluster and Grid Computing
14	CY234	Basic Physical Chemistry - II
15	CY519	Methods in Organic Synthesis
16	EC202	Digital Electronics
17	EC424	Embedded Computing System
18	EC612	Antenna Analysis and Synthesis
19	EC622	Analog & Mixed Mode VLSI
20	EC639	Advanced Process Control
21	EC652	Video Signal Processing
22	EE242	Digital Electronics and Microprocessor
23	EE632	Modeling and Control of Power Converters
24	EE644	Antenna Synthesis and Analysis

24	LS705	Advanced microbiology
25	LS711	Bioinformatics
26	LS729	Biofuels
27	MA324	Number Theory
28	MA404	Functions of a Complex Variable
29	ME352	Fluid Dynamics and Hydraulic Machines
30	ME605	Advanced Decision Modeling Technique
31	ME616	Fatigue and Fracture of Engineering Components
32	ME656	Gas Turbines and Jet Propulsion
33	ME710	Advanced Composites
34	MM314	Heat Treatment of Metallic Materials
35	MN322	Geo mechanics
36	PA102	Introduction to Architecture
37	PH304	Introduction to Mechanics
38	PH404	Electrodynamics
39	PH651	Crystal Symmetry and Crystal Physics
40	SM506	Financial Management
41	CY616	Nuclear Magnetic Resonance Spectroscopy
42	MA610	Real Analysis

25	HS544	Environment and Development
26	ID222	Geometric and Solid Modeling
27	ID434	Photo Communication
28	ID665	Rapid Prototyping and Tooling
29	LS411	Biophysics
30	MA208	Analysis – I
31	MA551	Numerical Analysis
32	ME230	Primary Production Processes
33	ME434	Computer Graphics for CAD/CAM
34	ME453	Energy Conservation and Waste Heat Recovery
35	ME601	Optimization Method in Engineering Design
36	MM227	Fuel Technology
37	MM446	Composite Materials
38	MM638	Mechanical Working of Materials
39	MN205	Mineral Exploration
40	MN632	Environmental Management
41	PH538	Special Topics in Condensed Matter Physics - I
42	SM618	Industrial and Services Marketing
43	CH628	Advanced Environmental Biotechnology
43	PH669	Special Topics in Low Temperature Physics - II

Day 4 : Date / Day of Examination : 27-FEB-2014 (Thursday)

FIRST SESSION (08.30 AM to 10.30 AM)		
S. No	Subject Code	Subject Name
1	BM322	Biomechanics
2	BM332	Biomechanics
3	BM632	Computational Fluid Dynamics in Bioengineering
4	BM682	Special Topics in Biotechnology and Medical Engineering - II
5	CR320	Science of Sintering
6	CR620	Industrial Glass Making
7	CS332	Algorithm Analysis and Design
8	CY532	Chemical Kinetics and Photochemistry
9	CY636	Special Topics in Physical Chemistry
10	EC332	Electronic Instrumentation
11	EE324	Power Electronics
12	ID344	Design of Production Tooling
13	LS410	Food Science
14	LS581	Cancer biology
15	LS707	Structural basis of cell signaling

SECOND SESSION (01.30 PM to 03.30 PM)		
S. No	Subject Code	Subject Name
1	BM244	Cell and Molecular Biology
2	BM444	Structural Biology
3	CE212	Structural Analysis
4	CE412	Pre-stressed Concrete
5	CE618	Pre-Stressed Concrete
6	CE626	Rock Mechanics
7	CE646	Evaluation and Strengthening of Pavements
8	CE654	Hydraulic Structures and Hydropower Engineering
9	CH212	Fluid Dynamics
10	CH330	Petroleum Refinery Engineering and Petrochemicals
11	CH434	Project Engineering
12	CH616	Advanced Fluidization Engineering
13	CR230	Science of Ceramic Materials
14	CS222	Database Management Systems

16	LS713	Microbial genetics
17	LS721	Bioethics and Intellectual Property Right
18	LS726	Molecular Biophysics
19	MA102	Mathematics - II
20	MA517	Lie Algebra
21	ME602	Robotics
22	ME621	Analytical Methods in Rotor Dynamics
23	ME637	Production System and Computer Integrated Manufacturing
24	ME662	Thermal Processes in Surface Engineering
25	ME760	Vacuum Technology
26	MN313	Underground Mining Technology
27	MN605	Rock Slope Technology
28	PA104	Building Materials
29	PH302	Properties of Matter
30	PH406	Condensed Matter Physics
31	SM508	Quantitative Techniques and Operations Research
32	SM638	Strategic Human Resource Management
33	CY622	Organometallics Compounds & their application
34	PH607	Problems in Condensed Matter Physics

15	CS435	Artificial Intelligence
16	CS641	Advanced Computer Architecture
17	CY524	Group Theory And Molecular Orbitals
18	EC412	Antenna Analysis and Synthesis
19	EC430	Industrial Electronics and Instrumentation
20	EC637	Medical Instrumentation
21	EC654	Statistical Signal Processing
22	EC662	Communication Networks
23	EE202	Electrical Engineering
24	EE240	Measurement and Instrumentation
25	EE407	Electric Drives
26	EE606	Transient in Power Systems
27	EE626	Nonlinear Control Systems
28	EE668	Instrumentation and Sensors
29	HS532	Planning and Policy: Issues in India
30	ID232	Art and Aesthetic Design
31	ID442	Rapid Product Development Technologies
32	ID661	Analysis and Design of Mechanical Systems
33	MA206	Introduction to Complex Analysis and Partial Differential Equations
34	ME414	Mechatronics
35	MM220	Unit Process of Extraction
36	MM352	Material Characterization Techniques
37	MM468	Joining of Metals
38	MM652	Experimental Techniques in Materials Engineering
39	MM655	Transport Phenomena
40	MN204	Mining Machinery
41	PH554	Physics of Thin Film Technology
42	SM626	Mergers and Acquisitions

Day 5 : Date / Day of Examination : 03-MAR-2014 (Monday)

FIRST SESSION (08.30 AM to 10.30 AM)		
S. No	Subject Code	Subject Name
1	BM316	Biosensors and Bio transducers
2	BM614	Biomedical Image Processing
3	BM644	Advanced Cell & Molecular Biology
4	CE318	Finite Element Method
5	CH336	Chemical Engg. Mathematics
6	CR336	Cement Technology
7	CR346	Nano ceramics
8	CR426	Tribology of Materials

SECOND SESSION (01.30 PM to 03.30 PM)		
S. No	Subject Code	Subject Name
1	BM202	Clinical Science
2	BM232	Bio fluid Mechanics
3	CE202	Surveying
4	CE421	Ground Improvement Techniques
5	CE612	Stability of Structures
6	CE620	Ground Improvement Techniques
7	CE658	Advances in Remote Sensing and GIS
8	CE664	Advances in Remote Sensing and GIS

9	CR446	Thin Film and Coating
10	CS336	Digital Signal Processing
11	CY538	Molecular Spectroscopy
12	CY543	Molecular Rearrangement
13	EC322	Embedded Systems
14	EE356	Digital Signal Processing
15	HS542	Poverty, Inequality and Human Development
16	ID352	Industrial Robotics
17	LS423	Advanced Techniques
18	LS727	Advance Techniques
19	LS728	Food Microbiology
20	MA326	Statistical Methods
21	MA521	Combinatorics
22	ME354	Refrigeration and Air-Conditioning
23	ME623	Design of Tribological Elements
24	ME648	Quality Engineering and Reliability
25	ME657	Computational Methods in Thermal Engineering
26	ME711	Fundamentals of Tribology
27	MM357	Corrosion and Degradation of Materials and Their Prevention
28	MN600	Mine Planning
29	MN604	Advanced Mine Planning
30	PA106	Architectural Design Principles
31	PH102	Physics II
32	PH408	Quantum Mechanics - II
33	SM510	Economics and Legal Environment
34	HS602	English Language Teaching

9	CH220	Chemical Engg. Thermodynamics
10	CH422	Simulation Modeling and Optimization of Chemical Process
11	CH638	Advanced Reaction Engineering & Reactor Design
12	CR244	Introduction to Engineering Materials
13	CR248	Fuels, Furnace and Stoichiometry
14	CR652	Applications of Phase Diagrams in Ceramic Industries
15	CS213	Principles of Programming Languages
16	CS622	Design of Computer Networks
17	CS626	Intrusion Detection Systems
18	CY526	Bio-inorganic Chemistry
19	CY536	Colloids and Surface Chemistry
20	EC204	Semiconductor Devices
21	EC443	Digital Image Processing
22	EC627	VLSI Technology
23	EC630	Industrial Electronics and Instrumentation
24	EC656	Data Compression
25	EE404	Renewable Energy Systems
26	EE604	Flexible AC Transmission Systems
27	EE664	Embedded Computing Systems
28	ID658	Mechatronics and MEMS
29	MA546	Differentiable Manifolds
30	ME210	Design of Machine Elements
31	MM212	Casting and Solidification of Materials
32	MM435	Fracture Mechanics and Failure Analysis
33	MM634	Metallurgical Failures: Detection and Analysis
34	MM648	Composite Materials
35	MN202	Mine Surveying
36	MN332	Remote Sensing and Its Application
37	PH202	Electricity and Magnetism
38	PH569	Special Topics in Low Temperature Physics-II
39	SM622	Financial Options, Futures and Swap
40	SM632	Performance Management

FIRST SESSION (08.30 AM to 10.30 AM)		
S. No	Subject Code	Subject Name
1	CE342	Transportation Engineering
2	CH334	Process Dynamics and Control
3	CR212	Ceramic Processing
4	CR612	Refractories for Metallurgical and Allied Processes
5	CR662	Ceramics in Energy Sectors
6	CY214	Basic Organic Chemistry - I
7	CY232	Chemical Kinetics
8	EC661	Advance Wireless Communication
9	EE204	Electro Magnetic Fields
10	HS523	Educational Psychology
11	HS546	Population Dynamics and Development
12	HS549	Public Economics
13	LS731	RNA Interference
14	ME350	Heat Transfer
15	MN321	Rock Mechanics
16	MN435	Eco-friendly Mining
17	PH667	Low Temperature Properties of Matter
18	SM512	Technology and Innovation Management
19	SM624	International Finance

SECOND SESSION (01.30 PM to 03.30 PM)		
S. No	Subject Code	Subject Name
1	CE100	Engineering Mechanics
2	CE130	Environment and Safety Engineering
3	CE604	Finite Element Method
4	CR424	Composite Materials
5	CS629	Network Security
6	EC436	Biomedical Instrumentation
7	EC446	Adaptive Signal Processing
8	EC646	Adaptive Signal Processing
9	EE406	High Voltage DC Transmission
10	EE732	System Design using HDL
11	MA524	Statistical Methods
12	ME440	Industrial Management
13	MN438	Solid Waste Management
14	PH508	Atomic and Molecular Physics
15	SM616	Retail Management
16	SM634	Organization Change and Development

Sd/-
Asst. Registrar(Academic)

Copy to:

1. All Notice Boards (Institute/Halls of Residence).
2. All Deans/ Chief Warden.
3. Registrar.
4. Professor In-charge Examinations
5. All Wardens of Halls.
6. All HODs are requested to send the question papers in sealed packets (packets supplied by Academic Office) containing required number of question papers Hall wise (actual student strength in the hall + 05 extra) as per the Hall arrangement list latest by **20.02.2014**. On the packet containing questions the HODs/ concerned faculty members are requested to clearly state the list of requisite tables, codes, charts etc, to be supplied to the student by the academic office during the examination.

[A sample copy of the relevant material may be attached on the question packet or may be sent to the undersigned separately for official record and timely supply]

** All faculties are requested to mention their mobile number on the question packets for any emergency queries during the examination.

7. Security Officer.
8. In-charge (Technical Service)