



राष्ट्रीय प्रौद्योगिकी संस्थान राउरकेला
NATIONAL INSTITUTE OF TECHNOLOGY ROURKELA

EXM/001

MID SEMESTER EXAMINATION PROGRAMME (2014-15 AUTUMN)

Date: 09-Sep-2014

Day 1 : Date / Day of Examination : 19-Sep-2014 (Friday)

FIRST SESSION (8.30 A.M. to 10.30 A.M.)		
Sl.No	Subject	Subject Name
1	BM241	Biotechnology in Human Health
2	BM331	Bioheat and Mass Transfer
3	BM417	Introduction to Biomedical Engineering
4	BM429	Materials in Medical Science
5	BM601	Anatomy and Physiology
6	BM601	Quantitative Physiology
7	CE303	Remote Sensing and Geographical Information System
8	CE403	Optimization Methods in Engineering
9	CE603	Applied Elasticity and Plasticity
10	CE647	Water Quality Modeling and Management
11	CH215	Basic Chemical Engineering
12	CH313	Process plant safety
13	CH425	Energy Conservation and Renewable Sources of Energy
14	CH615	Bioprocess Engineering
15	CR249	Materials Science and Engineering
16	CR259	Nanomaterials
17	CR359	Biomaterials for Artificial Implants
18	CR601	Industrial Ceramic Processing
19	CS327	Relational Database Management Systems
20	CS439	Computer Vision
21	CS442	Computer System Architecture
22	CS614	Software Project, Process and Quality Management
23	CY213	Name Reactions and Rearrangements
24	CY232	Chemical Kinetics
25	CY435	Introduction to Nanoscience and Nanotechnology
26	EC200	Fundamentals of Communication Systems
27	EC623	Reconfigurable System Design
28	EC655	Transform Domain Signal Processing
29	EE209	Network Analysis
30	EE431	Principles of Control Engineering
31	EE627	Optimal Control
32	EE653	Digital Image Processing
33	ER201	Physics of Atmosphere
34	ER202	Evolution of Early Earth

SECOND SESSION (1.30 P.M. to 3.30 P.M.)		
Sl.No	Subject	Subject Name
1	BM623	Advanced Tissue Engineering
2	CE626	Rock Mechanics
3	CE655	Environmental Impact and Risk Assessment
4	CE681	Special Topic in Civil Engineering –I
5	CH619	Interfacial Science and Engineering
6	CH629	Interfacial Science and Engineering
7	CR635	Whiteware Production and Practices
8	CR653	Manufacturing Technology of Electroceramics
9	CY616	Nuclear Magnetic Resonance Spectroscopy
10	EC450	Fundamentals of Digital Image Processing
11	EC615	Mobile Communication
12	EE621	Power Electronic Converters and Machine Drives
13	ER601	Theoretical Meteorology
14	FP611	Food Process Modelling and Simulation
15	HS313	Reading Indian Cinema
16	HS317	Structure of Modern English
17	HS341	Managerial Economics
18	HS342	Principles of Microeconomics
19	HS411	Ethical Leadership and Literature
20	HS420	Human Resource Management
21	HS428	Psychometrics
22	HS442	Money, Banking and Finance
23	HS536	Trends and Issues in Tribal Studies
24	HS608	Social Change
25	LS601	Advanced Bioinformatics
26	LS602	Advanced Immunology
27	LS606	Epigenetics
28	MA325	Linear Programming
29	MA611	Analysis
30	ME231	Total Quality Management
31	ME311	Composite Material
32	ME417	Control System Engineering
33	ME430	Industrial Management
34	ME457	Cryogenic Engineering
35	ME614	Experimental Stress Analysis
36	ME659	Cryogenic Process Engineering

35	HS323	Health Psychology
36	ID617	Design for Quality and Reliability
37	LS311	Cell and Cellular Techniques
38	LS318	Plant Biotechnology
39	MM427	Sponge Iron Technology
40	MM611	Process Modeling for Steel Industry
41	MN632	Environmental Management
42	PA161	Principles of Architectural Design
43	PA291	History of Architecture-I
44	SM505	Business Research Methodology
45	SM621	Consumer Behaviour and Marketing Research

37	MM211	Science and Technology of Materials
38	MM311	Phase Transformation
39	MM317	Material Technology
40	MM325	Ironmaking and Steelmaking
41	MM448	Advanced Engineering Materials
42	MM606	X – Ray and Electron Microscopy
43	MM652	Experimental Technique in Materials Engineering
44	MN206	Introductory Mining Technology
45	MN207	Mining Geology
46	PH311	Fundamentals of Thermal and Statistical Physics
47	PH312	Physics of Quantum World
48	PH351	Science of Nano-materials
49	PH602	Problems in Quantum Physics

Day 2 : Date / Day of Examination : 20-Sep-2014 (Saturday)

FIRST SESSION (8.30 A.M. to 10.30 A.M.)		
Sl.No	Subject	Subject Name
1	BM311	Medical Signal and Signal Processing
2	BM403	Biomedical Engineering
3	BM403	Medical Biotechnology
4	BM621	Advanced Biomaterials
5	BM644	Advanced Cell and Molecular Engineering
6	CE100	Engineering Mechanics
7	CE130	Environment and Safety Engineering
8	CE321	Reinforced Concrete Design
9	CE321	Structural Design
10	CE611	Advanced Soil Mechanics
11	CE637	Traffic Engineering
12	CH213	Chemical Engineering Thermodynamics
13	CH411	Reaction Kinetics and Catalysis
14	CH621	Advanced Fluid Dynamics
15	CR431	Composite Materials
16	CS613	Combinatorial Optimization
17	EC205	Signals and Networks
18	EC311	Analog Communication Systems
19	EC653	Image Processing and Computer Vision
20	EE341	Embedded Systems
21	EE645	Adaptive Signal Processing
22	ER513	Structural Geology
23	FP613	Transfer Processes in Food Engineering
24	HS541	Economics of Development
25	HS609	Ethics and Values
26	ID321	Ergonomics in Design
27	LS407	Microbiology
28	LS603	Advanced Microbiology
29	MA403	Linear Algebra
30	MA632	Advanced Numerical Analysis
31	MA652	Statistical Inference
32	ME351	Fluid Mechanics
33	MM402	Mechanical Behaviour of Materials
34	MM601	Metallurgical Thermodynamics and Kinetics
35	MN333	Mine Ventilation
36	MN401	Mine Planning
37	MN600	Mine Planning
38	MN601	Rock Excavation Engineering
39	PH405	Statistical Mechanics

SECOND SESSION (1.30 P.M. to 3.30 P.M.)		
Sl.No	Subject	Subject Name
1	BM201	Basic Medical Science
2	BM351	Bioinstrumentation and Process Control
3	CE203	Mechanics of Solids
4	CE423	Advanced Design of Reinforced Concrete Structures
5	CE621	Matrix Method of Structural Analysis
6	CE657	Water Quality Modeling and Management
7	CH325	Heat Transfer Operation
8	CH617	Fire Engineering and Explosion Control
9	CR203	Ceramic Raw Materials
10	CR303	Refractory Technology
11	CR643	Fuel Cell and Batteries
12	CR663	Testing and Ceramic Characterization
13	CS321	Data Communication
14	CS421	Computer Networks
15	CS617	Graph Theory and Network Algorithms
16	CY221	Basic Inorganic Chemistry - I
17	CY221	Chemistry of Industrial Materials
18	CY411	Stereochemistry and Reaction Mechanism
19	CY521	Bio-Inorganic Chemistry
20	EC202	Digital Electronics
21	EC334	Instrumentation Devices
22	EC433	Process Control and Instrumentation
23	EE241	Network Theory
24	EE401	Electric Drives
25	ER610	Applied Isotope Geology
26	ER616	Satellite Remote Sensing for Geo-resource Evaluation
27	HS535	Gender and Development
28	HS538	Urban Governance and Development
29	ID613	Elements of Design
30	LS402	Bioinformatics
31	MA514	Homotopy Theory
32	MA551	Discrete Mathematics
33	ME411	Vibration Engineering
34	ME603	Applied Elasticity and Plasticity
35	ME650	Heat Transfer – I: Conduction and Radiation Heat Transfer
36	MM201	Metallurgical Thermodynamics and Kinetics
37	MM336	Mechanical Working of Metallic Materials
38	PH203	Optics
39	PH303	Optics
40	PH331	World of LASERS
41	PH501	Nuclear and Particle Physics

42	PH603	Problems in Statistical Physics
43	SM502	Managerial Economics
44	SM622	Strategic Brand Management

Day 3 : Date / Day of Examination : 22-Sep-2014 (Monday)

FIRST SESSION (8.30 A.M. to 10.30 A.M.)		
Sl.No	Subject	Subject Name
1	BM614	Medical Image Processing and Analysis
2	BM625	Nanobiotechnology
3	BM657	Bioprocess Optimization
4	CE401	Estimation and Construction Management
5	CE615	Soil Exploration and Analysis of Foundations
6	CH221	Fluid Dynamics
7	CH623	Advanced Mass Transfer
8	CR603	Whiteware Production and Practices
9	CS315	Optimization Techniques
10	CS636	Image Processing
11	CS652	Software Architecture
12	CY101	Chemistry
13	CY421	Main Group and Transition Metal Chemistry
14	EC421	Digital VLSI Design
15	EC621	Digital VLSI Design
16	EE429	Artificial Intelligence
17	EE637	Soft Computing Techniques
18	ER512	Crystallography and Mineralogy
19	HS511	Technical and Business Communication
20	LS201	Basic Biochemistry
21	LS401	Biochemistry
22	MA401	Real Analysis
23	ME211	Kinematics of Machines
24	ME600	Applied Finite Element Analysis
25	MM203	Principles of Physical Metallurgy
26	MM620	Iron Making
27	MM665	Powder Technology
28	MN639	Safety Risk Assessment and Management
29	PA141	Building Materials-I
30	PH200	Heat and Thermodynamics
31	PH403	Classical Mechanics
32	PH667	Low Temperature Properties of Matter
33	SM503	Financial and Cost Accounting
34	SM633	Commercial Banking

SECOND SESSION (1.30 P.M. to 3.30 P.M.)		
Sl.No	Subject	Subject Name
1	BM203	Basic Clinical Science
2	CE232	Transportation Engineering
3	CE311	Mechanics of Soil
4	CE627	Analysis and Design of Plates and Shells
5	CE649	Water Resources Management
6	CH331	Equipment Design (Mechanical aspect)
7	CR201	Unit Operations in Ceramics Processing
8	CR301	Physical Ceramics
9	CS334	Operating Systems Design
10	CY511	Methods in Organic Synthesis
11	CY632	Chemistry of Nanomaterials
12	EC331	Control System Engineering
13	EE203	Electrical Machines – I
14	EE301	Electrical Machines – II
15	FP615	Food Analysis and Quality Control
16	HS611	Introduction to Economic Growth and Development
17	HS614	Critical Approaches
18	ID611	Advanced Product Design and Development
19	LS404	Enzymology and Metabolism
20	LS604	Cell Signalling
21	MA406	Abstract Algebra
22	MA621	Probability and Statistics
23	MA629	Advanced Statistical Methods
24	ME331	Metal Machining and Automation
25	MM202	Ironmaking
26	MN201	Mine Development
27	MN321	Rock Mechanics
28	PA241	Building Materials – II
29	PH201	Waves and Oscillations
30	PH301	Waves and Oscillation
31	SM613	Consumer Behaviour and Marketing Research
32	SM732	Managing Employee Relations

Day 4 : Date / Day of Examination : 23-Sep-2014 (Tuesday)

FIRST SESSION (8.30 A.M. to 10.30 A.M.)		
Sl.No	Subject	Subject Name
1	BM643	Advanced Protein Engineering
2	CE441	Irrigation Engineering
3	CE613	Soil-Structure Interaction
4	CE633	Highway and Airport Pavement Materials
5	CE645	Advanced Fluid Mechanics
6	CH415	Colloidal and Interfacial Science and Engineering
7	CS427	Network Security
8	CS443	Embedded Systems
9	CY431	Chemistry of Nanomaterials
10	CY431	Quantum Chemistry
11	EC341	Digital Signal Processing
12	EE321	Transmission and Distribution of Electrical Power
13	EE425	Advanced Control Systems Engineering
14	EE425	Control System - II
15	EE615	Power System Dynamics
16	ER514	Geochemistry
17	HS531	Social Institutions and Development
18	ID431	Rapid Product Development Technologies
19	LS403	Cell Biology
20	MA101	Mathematics - I
21	MA301	Algebra
22	MA405	Partial Differential Equations
23	ME333	Process Control and Assurance Science
24	ME451	Power Plant Engineering
25	ME610	Analysis and Synthesis of Mechanisms
26	ME631	Production Technology
27	MM303	Deformation Theory of Metals
28	MM603	Experimental Technique in Materials Engineering
29	MM659	Vacuum Technology in Materials Engineering
30	MN403	Geographical Information System (GIS)
31	SM504	Marketing Management
32	SM631	Financial Institutions, Instruments and Markets

SECOND SESSION (1.30 P.M. to 3.30 P.M.)		
Sl.No	Subject	Subject Name
1	BM353	Biochemical Engineering
2	BM611	Biomedical Signal Processing and Analysis
3	CH613	Environmental Management System
4	CR631	Mechanical Behaviour of Ceramics
5	CS632	Distributed Operating Systems
6	EC415	Mobile Communication
7	EC651	Digital Filter Design
8	EE643	Microwave and Antenna Systems
9	HS602	English Language Teaching
10	HS610	Research Methodology
11	LS607	Food Microbiology
12	LS608	Membrane Biology
13	MA201	Mathematics – III
14	MA205	Calculus
15	MA205	Introduction to Numerical Analysis
16	MA633	Numerical solutions of ODE and PDE
17	MM442	Advanced Materials
18	MN606	Strata Control Technology
19	PA293	Building Construction-I
20	PH401	Mathematical Physics
21	PH601	Problems in Classical Physics
22	SM615	Product and Brand Management
23	SM641	Employee Relations and Labour Legislations
24	SM725	Analytics of Mergers and Acquisitions

FIRST SESSION (8.30 A.M. to 10.30 A.M.)		
Sl.No	Subject	Subject Name
1	BM421	Tissue Engineering
2	BM634	Advanced Biomechanics
3	CE323	Advanced structural analysis
4	CE631	Transportation Systems Planning
5	CE641	Hydrologic Elements and Analysis
6	CH421	Simulation Modeling and Optimization Techniques in Chemical Process
7	CH611	Bioenergy Engineering
8	CH631	Process Plant Simulation
9	CR421	Application of Glass and Glass ceramics
10	CR641	Ceramics in Energy Sectors
11	CS211	Discrete Mathematics
12	CS625	Data Warehousing and Mining
13	CY212	Basic Organic Chemistry - II
14	CY433	Chemical Kinetics and Photochemistry
15	CY623	Catalysis - principles and applications
16	EC100	Basic Electronics Engineering
17	EC616	Microwave Engineering
18	EC620	Modeling and Circuit Simulators for VLSI Systems
19	EC631	Analytical Instrumentation
20	EE100	Basic Electrical Engineering
21	EE417	High Voltage Engineering
22	EE629	Digital Control
23	EE631	Industrial Electronics
24	EE641	Advanced Communication Techniques
25	ER511	Physical Geology
26	MA407	Topology
27	ME353	Internal Combustion Engines
28	ME618	Rotor Dynamics
29	ME634	Metal Cutting and Tool Design
30	ME651	Advanced Fluid Mechanics
31	MM205	Non Ferrous Metal Extraction-Principle and Practice
32	MM449	Nanostructured Materials
33	MN331	Mine Environmental Engineering
34	PA171	History of Architecture – I
35	PH407	Quantum Mechanics - I
36	SM501	Organizational Behavior and Structure
37	SM635	Security Analysis and Portfolio Management
38	SM645	Employee Compensation and Benefits Management

SECOND SESSION (1.30 P.M. to 3.30 P.M.)		
Sl.No	Subject	Subject Name
1	BM233	Biomechanics
2	BM319	Biomedical Instrumentation
3	BM365	Environmental Biotechnology
4	BM627	Cryo-Tissue Engineering
5	CE201	Civil Engineering Materials and Construction
6	CE625	Composite Structures
7	CE625	Soil Exploration and Analysis of Foundations
8	CH211	Chemical Process Calculation
9	CH311	Heat Transfer Operations
10	CR205	Materials Thermodynamics
11	CR311	Instrumental Characterization
12	CS341	Microprocessors and Microcontrollers
13	CY211	Basic Organic Chemistry-I
14	EC300	Microprocessor
15	EE243	Analog Electronics
16	EE311	Transmission and Distribution of Electric Power
17	ER207	Mining Geology
18	FP617	Advanced Thermal Operations in Food Processing
19	HS553	International Trade and Development
20	HS604	Advanced Developmental and Cultural Psychology
21	HS613	Developmental Cognitive Neuroscience
22	ID221	Art and Aesthetic Design
23	ID344	Instrumentation and Control
24	ID655	CNC Systems and Programming
25	LS405	Developmental Biology
26	LS609	Molecular Biophysics
27	LS611	Molecular Pathogenesis
28	MA612	Algebra
29	MA634	Mathematical Methods
30	ME250	Thermal Sciences
31	ME251	Engineering Thermodynamics
32	ME431	Decision Modeling
33	MM204	Phase Transformation
34	MN211	Surface Mining Technology
35	MN327	Solid Fuel Technology
36	PA281	Climate Responsive Architecture
37	PH641	Dielectric and Magnetic Properties of Materials
38	SM623	Retail Management
39	SM660	Environment, Health and Safety Management

FIRST SESSION (8.30 A.M. to 10.30 A.M.)		
Sl.No	Subject	Subject Name
1	BM341	Genetic Engineering
2	BM654	Advanced Bioseparation
3	CE209	Concrete Technology
4	CE331	Environment Engineering
5	CE618	Environmental Geotechnics
6	CH315	Mass Transfer Operations
7	CH321	Fundamentals of Biochemical Engg.
8	CH321	Mass Transfer Operations
9	CR219	Introduction to Ceramics
10	CR341	Physical Ceramics
11	CR417	Unshaped Refractories
12	CR419	Biomaterials for Artificial Implants
13	CR451	Ceramic Coating
14	CS212	Object Oriented Programming and Web Application Using C#
15	CS222	Database Management Systems
16	CS241	Analog Electronics
17	CS619	Software Engineering Requirements and Modeling
18	CS631	Information Theory and Coding
19	CY622	Organometallic Compounds and their Application
20	EC203	Networks
21	EC633	PC Based Instrumentation
22	EE611	Machine Analysis
23	EE639	Estimation of Signals and Systems
24	EE665	Mobile Radio Channels
25	HS500	Research Methodology in Social Sciences
26	ID665	Rapid Prototyping and Tooling
27	LS501	Ecology and Environmental Sciences
28	MA207	Introduction to Numerical Analysis
29	MA315	Abstract Algebra
30	MA427	Elementary Number Theory
31	ME608	Control system Engineering
32	ME640	Laser Application in Manufacturing
33	ME654	Advanced Thermodynamics
34	MM637	Mechanical Behaviour of Materials
35	PH101	Physics I
36	SM506	Management Information Systems
37	SM632	Financial Derivatives

SECOND SESSION (1.30 P.M. to 3.30 P.M.)		
Sl.No	Subject	Subject Name
1	BM251	Bioprocess Calculation
2	CE413	Advanced Foundation Engineering
3	CH223	Chemical Process Technology
4	CH318	Principles & Applications of Nanotechnology
5	CH337	Equipment Design (Mech. Aspects)
6	CR305	Glass Technology
7	CR418	Nanomaterials
8	CS331	Theory of Computation
9	CS338	Systems Software
10	CS434	Image Processing
11	EE345	Communication Systems Principles
12	ER608	Rock Water Interaction
13	HS550	Theory of Money, Output and Employment
14	HS605	Organizational Dynamics
15	LS613	Research Methodology
16	MA203	Introduction to Real Analysis
17	ME213	Mechanics of Solids
18	ME701	Composite Materials
19	MM331	Deformation Theory of Metals
20	PH511	Atomic and Molecular Physics
21	SM643	Training and Development

Day 7 : Date / Day of Examination : 26-Sep-2014 (Friday)

FIRST SESSION (8.30 A.M. to 10.30 A.M.)		
Sl.No	Subject	Subject Name
1	CE623	Material Technology
2	CE643	Computational Fluid Dynamics
3	CR615	Electron Microscopy
4	CS621	Cryptographic Foundations
5	CS661	Advanced Data Structures
6	CY231	Basic Physical Chemistry-I
7	EC611	Digital Communication
8	EE307	Electrical Machines
9	EE625	Systems and Control Theory
10	EE636	System Identification and Adaptive Control
11	LS203	Basic Microbiology
12	MA532	Fluid Dynamics
13	MN623	Advance Environmental Engineering
14	PH605	Experimental Techniques in Physics
15	SM625	Industrial Marketing
16	SM733	Managing Creativity and Innovation

SECOND SESSION (1.30 P.M. to 3.30 P.M.)		
Sl.No	Subject	Subject Name
1	BM321	Biomaterials
2	CH625	Advanced Heat Transfer
3	CR332	Structural Ceramics
4	CR611	Testing and Characterization
5	EC201	Analog Electronics
6	LS612	rDNA Biology
7	ME606	Neural Network and Artificial Intelligence
8	SM646	Talent Management
9	SM724	Empirical Finance