



# राष्ट्रीय प्रौद्योगिकी संस्थान राउरकेला


NATIONAL INSTITUTE OF TECHNOLOGY ROURKELA

NITR/AC/EXAM./13/M/2041

09.04.2013

## PROGRAMME FOR B. TECH., DUAL DEGREE B.TECH & M.TECH, M.SC.(2 YR & 5YR), AND MA END-SEMESTER (SPRING) EXAMINATION 2012-13.

Day 1 : Date / Day of Examination : 23-APR-2013 ( Tuesday )


FIRST SESSION ( 07.00 AM to 10.00 AM )		
Sl.No	Subject Code	Subject Name
1	BM314	Biomedical Image Processing(BM)
2	BM352	Biochemical Engineering(BT)
3	CE312	Design of Steel Structures
4	CH330	Petroleum Refinery Engineering and Petrochemicals
5	CR310	Refractories Technology
6	CS312	Systems Analysis and Design
7	CY512	Structure and Functions of Biomolecules
8	EC312	Electromagnetic Theory(EC & EI) 
9	HS500	Research Methodology
10	ID312	Product Design - II
11	LS404	Molecular Biology and Biotechnology
12	MA102	Mathematics - II
13	MA326	Statistical Methods(CY5-MA5-PH5)
14	MA404	Functions of a Complex Variable
15	ME330	Metal Cutting and Tool Design
16	MM357	Corrosion and Degradation of Materials and Their Prevention
17	MN313	Underground Mining Technology
18	PH402	Numerical Techniques in Physics

SECOND SESSION ( 10.30 AM to 01.30 PM )		
Sl.No	Subject Code	Subject Name
1	BM202	Basic Clinical Science(Back log only)
2	BM202	Clinical Science(BM)
3	BM232	Biofluid Mechanics(BT)
4	BM432	Biomechanics(BM & BT)
5	CE252	Fluid Mechanics
6	CE421	Ground Improvement Techniques
7	CH226	Fuels and Combustion
8	CH426	Coal Processing Technology
9	CR212	Ceramic Processing
10	CR420	Glass-Ceramic Technology
11	CS242	Computer Organization and Architecture
12	CS412	Software Engineering
13	CY214	Basic Organic Chemistry - I(CY5-MA5-PH5)
14	CY514	Environmental Chemistry
15	EC412	Antenna Analysis and Synthesis(EC)
16	EC430	Industrial Electronics and Instrumentation(EI)
17	EE204	Electro Magnetic Fields
18	EE404	Renewable Energy Systems(EE & PH2)
19	EE406	High Voltage DC Transmission
20	ID222	Geometric and Solid Modeling
21	LS511	Genetics
22	MA502	Functional Analysis
23	ME230	Primary Production Processes
24	ME440	Industrial Management
25	MM212	Casting and Solidification of Materials
26	MM435	Fracture Mechanics and Failure Analysis
27	MN202	Mine Surveying
28	MN400	Mine Planning

<b>FIRST SESSION ( 07.00 AM to 10.00 AM )</b>		
<b>Sl.No</b>	<b>Subject Code</b>	<b>Subject Name</b>
1	BM312	Biomedical Instrumentation(BM)
2	BM391	Special Topics in Biotechnology and Medical Engineering – I(BT)
3	CE100	Engineering Mechanics
4	CE130	Environment and Safety Engineering
5	CE322	Geotechnical Engineering
6	CH334	Process Dynamics and Control
7	CR322	Glass Technology
8	CS332	Algorithm Analysis and Design
9	CY323	Basic Inorganic Chemistry - II
10	CY522	Chemistry of Transition and Non-transition Elements
11	EC314	Digital Communication(EC)
12	EC334	Instrumentation Devices(EI)
13	EE322	Control System - I
14	HS523	Educational Psychology
15	HS548	Demographic Transition and Health Policy
16	ID352	Industrial Robotics
17	LS410	Food Science
18	MA324	Number Theory
19	MA402	Measure Theory
20	ME350	Heat Transfer
21	MM324	Steel Making
22	MN330	Mine Ventilation
23	PH404	Electrodynamics

<b>SECOND SESSION ( 10.30 AM to 01.30 PM )</b>		
<b>Sl.No</b>	<b>Subject Code</b>	<b>Subject Name</b>
1	CE452	Water Resources Engineering
2	CH428	Disaster Management in Chemical Industries
3	CS431	Compiler Design
4	CY519	Methods in Organic Synthesis
5	CY537	Advanced Solid State Chemistry
6	EC424	Embedded Computing System(EC & EI)
7	EE407	Electric Drives
8	EE408	Electromagnetic Field Theory and Application
9	MA202	Mathematics - IV
10	ME414	Mechatronics
11	PH508	Atomic and Molecular Physics



<b>FIRST SESSION ( 07.00 AM to 10.00 AM )</b>		
<b>Sl.No</b>	<b>Subject Code</b>	<b>Subject Name</b>
1	BM322	Biomechanics(BM)
2	BM354	Bioseparation(BT)
3	CE342	Transportation Engineering
4	CH336	Chemical Engg. Mathematics
5	CR320	Science of Sintering
6	CS334	Operating Systems Design
7	CY313	Natural Products
8	CY322	Basic Inorganic Chemistry-I
9	EC322	Embedded Systems(EC & EI) 
10	EE324	Power Electronics
11	HS533	Developmet: Social, Antropoligical and political Perspective
12	ID344	Design of Production Tooling
13	LS403	Immunology
14	MA522	Operations Research
15	ME352	Fluid Dynamics and Hydraulic Machines
16	MM352	Material Characterization Techniques
17	MN304	Computer Application in Mining
18	PH102	Physics II
19	PH406	Condensed Matter Physics

<b>SECOND SESSION ( 10.30 AM to 01.30 PM )</b>		
<b>Sl.No</b>	<b>Subject Code</b>	<b>Subject Name</b>
1	BM244	Cell and Molecular Biology(BM)
2	BM254	Cell and Molecular Biology(Back log only)
3	BM444	Structural Biology(BT)
4	CE202	Surveying
5	CE412	Pre-stressed Concrete
6	CH220	Chemical Engg. Thermodynamics
7	CH422	Simulation Modeling & Optimisation of Chemical Process
8	CR230	Science of Ceramic Materials
9	CR424	Composite Materials
10	CS222	Database Management Systems
11	CY234	Basic Physical Chemistry - II
12	CY526	Bio-inorganic Chemistry
13	CY558	Organometallic Chemistry
14	EC443	Digital Image Processing(EC & EI)
15	EE202	Electrical Engineering(EC-EI-ME)
16	EE240	Measurement and Instrumentation
17	EE438	Industrial Automation and Control
18	EE454	Digital Communication
19	HS544	Environment and Development
20	ID232	Art and Aesthetic Design
21	MA224	Linear Programming and Theory of Games
22	MA510	Calculus of Several Variables
23	MM220	Unit Process of Extraction
24	MM468	Joining of Metals
25	MN204	Mining Machinery
26	MN435	Eco-friendly Mining
27	PH564	Magnetism-Principle and Applications

**Day 4 : Date / Day of Examination : 26-APR-2013 ( Friday )**

<b>FIRST SESSION ( 07.00 AM to 10.00 AM )</b>		
<b>Sl.No</b>	<b>Subject Code</b>	<b>Subject Name</b>
1	BM316	Biosensors and Biotransducers( <b>BM &amp; BT</b> )
2	CE314	Structural Dynamics
3	CE318	Finite Element Method
4	CH312	Transport Phenomena
5	CR336	Cement Technology
6	CR346	Nanoceramics
7	CS336	Digital Signal Processing
8	EC100	Basic Electronics Engineering
9	EC332	Electronic Instrumentation( <b>EC &amp; EI</b> )
10	EE100	Basic Electrical Engineering
11	EE356	Digital Signal Processing
12	HS542	Poverty, Inequality and Human Development
13	ME354	Refrigeration and Air-Conditioning
14	MM314	Heat Treatment of Metallic Materials( <b>MM &amp; ID</b> )
15	MN322	Geomechanics
16	PH302	Properties of Matter( <b>CY5-MA5-PH5</b> )
17	PH408	Quantum Mechanics - II

<b>SECOND SESSION ( 10.30 AM to 01.30 PM )</b>		
<b>Sl.No</b>	<b>Subject Code</b>	<b>Subject Name</b>
1	BM254	Bioprocess Calculation( <b>BT</b> )
2	CE212	Structural Analysis
3	CH212	Fluid Dynamics
4	CR244	Introduction to Engineering Materials
5	CR248	Fuels, Furnace and Stoichiometry
6	CR426	Tribology of Materials
7	CR446	Thin Film and Coating
8	CS335	Computer Graphics and Multimedia
9	CS444	Cluster and Grid Computing
10	EC204	Semiconductor Devices
11	EC436	Biomedical Instrumentation( <b>EI</b> )
12	EC444	Soft Computing( <b>EC</b> )
13	EE242	Digital Electronics and Microprocessor
14	LS411	Biophysics
15	LS505	Food Processing Technology
16	LS530	Aquatic Biology and Marine Biotechnology
17	LS531	Epigenetics
18	LS532	Molecular Medicine
19	LS536	RNAi, Stem cells & Oncogenomics
20	LS581	Cancer biology
21	ME210	Design of Machine Elements( <b>ME &amp; ID</b> )
22	ME434	Computer Graphics for CAD/CAM
23	MM227	Fuel Technology
24	MM446	Composite Materials
25	MN421	Rock Slope Technology
26	MN442	Mine Fires and spontaneous heating
27	PH202	Electricity and Magnetism( <b>CY5-MA5-PH5</b> )
28	PH512	Advanced Statistical Mechanics
29	PH554	Physics of Thin Film Technology
30	PH556	X-rays and Nano Science



**Day 5 : Date / Day of Examination : 29-APR-2013 ( Monday )**

<b>FIRST SESSION ( 07.00 AM to 10.00 AM )</b>		
<b>Sl.No</b>	<b>Subject Code</b>	<b>Subject Name</b>
1	BM390	Special Topics in Biotechnology and Medical Engineering (Biotechnology in Human Health)
2	EC200	Fundamentals of Communication Systems
3	EC320	Embedded Systems
4	EC440	Soft Computing Techniques
5	HS311	Communicative English.
6	HS321	Organizational Behaviour.
7	HS327	Cognitive Science
8	HS328	Sports Psychology
9	HS418	Language and Writting
10	HS532	Planning and Policy:Issues in India
11	ID350	Robotics and Automation
12	MA312	Real Analysis
13	MA423	Discrete Mathematics
14	MA425	Elementary Stochastic Processes with Applications
15	ME300	Finite Element Analysis
16	ME430	Industrial Management
17	ME436	Entrepreneurship
18	ME450	Computational Fluid Dynamics and Heat Transfer
19	MM448	Advanced Engineering Materials
20	PH341	Treatise of Einstein Work and Beyond
21	PH352	X-Ray Techniques For Structure Evaluation

<b>SECOND SESSION ( 10.30 AM to 01.30 PM )</b>		
<b>Sl.No</b>	<b>Subject Code</b>	<b>Subject Name</b>
1	BM429	Materials in Medical Science
2	CE214	Theory of Elasticity
3	CE302	Disaster Management
4	CH228	Treatment of Industrial Effluents
5	CH338	Industrial Instrumentation and Process Control
6	CH418	Recent Separation Technologies
7	CR249	Materials Science and Engineering
8	CR339	Ceramics in Electronic Applications
9	CS327	Relational Database Management Systems
10	CS333	Operating Systems
11	CS343	Digital Logic Design
12	CY232	Chemical Kinetics
13	CY325	Introduction to Supramolecular Chemistry
14	CY413	Spectroscopic Methods of Analysis
15	CY431	Chemistry of Nanomaterials
16	EE208	Advanced Electrical Engineering
17	EE308	Utilization of Electrical Energy
18	HS534	Natural Resource Management and Sustainable Development
19	HS538	Urban Governance and Development
20	MM358	Experimental Techniques in Materials Engineering
21	MN336	Solid Fuels and Clean Coal Technology
22	MN438	Solid Waste Management
23	PH321	Physics of Semiconducting Materials

FIRST SESSION ( 07.00 AM to 10.00 AM )		
Sl.No	Subject Code	Subject Name
1	CS102	Data Structures and Algorithm
2	CY527	Supramolecular Chemistry
3	CY535	Electrochemistry
4	CY536	Colloids and Surface Chemistry
5	LS427	Advanced Techniques
6	PH204	Introduction to Mechanics(Backlog only)
7	MM318	Principles and Practice of Heat Treatment
8	SM512	Technology and Innovation Management

SECOND SESSION ( 10.30 AM to 01.30 PM )		
Sl.No	Subject Code	Subject Name
1	CY532	Chemical Kinetics and Photochemistry
2	EC202	Digital Electronics(EC-EI, PH5 4 <sup>th</sup> & 6 <sup>th</sup> Sem)
3	EC439	Advanced Process Control(EI)
4	EC446	Adaptive Signal Processing(EC)
5	EE312	Switch Gear and Protective Devices
6	MA524	Statistical Methods(MA2 2 <sup>nd</sup> )
7	MA554	Graph Theory(MA5 8 <sup>th</sup> & MA2 4 <sup>th</sup> Sem)
8	ME351	Fluid Mechanics
9	MN205	Mineral Exploration
10	MN332	Remote Sensing and Its Application
11	SM502	Human Resource Management
12	SM602	Business Ethics and Corporate Governance

  
 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 + 03 extra) as per the Hall arrangement list latest by **15.04.2013**. The concerned faculty members are requested to clearly state their **mobile number** and the list of requisite tables, codes, charts etc,(verified by HOD) to be supplied to the student by the academic office during the examination. M.Tech examination arrangement may be done in the department. However, the programme & sitting arrangement may be sent to AR (Acad)/PIC Examinations by **19.04.2013**.
7. Security Officer.
8. In-charge (Technical Service).
9. Group e-mail to all students and Faculties