

CRITERIA FOR SELECTION OF SUBJECTS IN REVISED SCHEME (WITH EFFECT FROM SUMMER 2006 EXAMINATION)

Candidates of Section A/Section B, who appeared up to and including Winter 2005 examination in the existing scheme (not applicable to candidates, who have already switched over to revised scheme from Summer 2005 Examination) as per RSAB [item 11B (iii) -b on page 39 of December 2004 issue of 'Technicians' Journal and secure exemption in one or more subjects] must select the balance subjects from the revised scheme *with effect from Summer 2006 Examination* with the following conditions :

SECTION A (DIPLOMA)

1. Candidates, who secure exemption in 4 (four) subjects in existing scheme up to and including Winter 2005 examination will need to pass the subject **Fundamentals of Design and Manufacturing (AD 301)** of the Revised Scheme.
2. Candidates, who secure exemption in 3 (three) subjects in existing scheme will need to pass the subjects **Fundamentals of Design and Manufacturing (AD 301) and Computing and Informatics (AD 303)** of the Revised Scheme.
3. Candidates, who secure exemption in 2 (two) subjects in existing scheme will need to pass the following subjects of the Revised Scheme :
 - i) Fundamentals of Design and Manufacturing (AD 301);
 - ii) Computing and Informatics (AD 303); and
 - iii) Material Science and Engineering (AD 302) OR Society and Environment (AD 304).
4. Candidates, who secure exemption in 1 (one) subject in existing scheme, will have to pass all 4 (four) subjects of Section A (Diploma) of the Revised Scheme.

SECTION A (NON-DIPLOMA)

1. Candidates, who secure exemption in 9 (nine) subjects up to and including Winter 2005 examination in existing scheme, will need to pass the subject **Fundamentals of Design and Manufacturing (AN 201)** of the Revised Scheme.
2. Candidates, who secure exemption in 8 (eight) subjects in existing scheme, will need to pass the subjects **Fundamentals of Design and Manufacturing (AN 201) and Computing and Informatics (AN 203)** of the Revised Scheme.
3. Candidates, who secure exemptions up to seven subjects in existing scheme, will need to select and pass the balance subjects [i.e., Ten — (minus) number of subjects exempted from the existing scheme] of the Revised Scheme as below :
 - i) Fundamentals of Design and Manufacturing (AN 201);
 - ii) Computing and Informatics (AN 203);

and remaining subjects of the Revised Scheme subject to restriction as per Table 1 below :

Table 1

Existing Syllabi		Revised Syllabi	
Subject Exempted in Existing Scheme		Subject <i>cannot</i> be opted from the Revised Scheme	
Sub. Code	Subject	Sub. Code	Subject
AN 01	Mathematics I	AN 209	Engineering Mathematics
AN 02	Mathematics II	AN 209	Engineering Mathematics
AN 03	Engineering Drawing and Graphics	AN 207	Engineering Drawing and Graphics
AN 04	Electrical Science	AN 210	Electrical Science
AN 05	Mechanical Science	AN 205	Mechanical Science
AN 06	Natural Science	AN 206	Engineering Physics and Chemistry
AN 07	Material Science and Processes	AN 202	Material Science and Engineering
AN 08	Fundamentals of Electronics and Instrumentation	AN 208	Electronics and Instrumentation
AN 09*	Computer System and Data Analysis		NIL
AN 10	Engineering, Environment and Society	AN 204	Society and Environment

* There is no restriction of subject selection for AN 09 in Revised Scheme.

Illustrative Examples

CASE	SECURED EXEMPTION IN SUBJECTS IN EXISTING SCHEME	SUBJECTS CANNOT BE OPTED IN REVISED SCHEME	BALANCE SUBJECTS AVAILABLE TO OPT FROM REVISED SCHEME	SELECTION OF SUBJECTS IN REVISED SCHEME (as per item 3)
1	AN 01 AN 03 AN 04 AN 07 AN 09 (secured exemption in 5 subjects)	AN 209 AN 207 AN 210 AN 202 NO RESTRICTION	AN 201 AN 203 AN 204 AN 205 AN 206 AN 208 (to opt 5 subjects out of 6 above)	AN 201, AN 203 + ANY THREE from AN 204, AN 205, AN 206 AN 208
2	AN 01 AN 02 AN 05 AN 06 AN 10 (secured exemption in 5 subjects)	AN 209 AN 209 AN 205 AN 206 AN 204	AN 201 AN 202 AN 203 AN 207 AN 208 AN 210 (to opt 5 subjects out of 6 above)	AN 201, AN 203 + ANY THREE from AN 202, AN 207, AN 208 AN 210
3	AN 01 AN 02 AN 09 (secured exemption in 3 subjects)	AN 209 AN 209 NO RESTRICTION	AN 201 AN 202 AN 203 AN 204 AN 205 AN 206 AN 207 AN 208 AN 210 (to opt 7 subjects out of 9 above)	AN 201, AN 203 + ANY FIVE from AN 202, AN 204, AN 205, AN 206, AN 207 AN 208, AN 210

SECTION B (ALL BRANCHES)

- Candidates, who secure exemption in 9 (nine) subjects, excluding **Management of Systems (IC 02)** in the Existing Scheme, will need to pass the subject **Engineering Management (IC 402)** as per the Revised Scheme. However, candidates, who secure exemption in **Management of Systems (IC 02)** amongst the 9 (nine) subjects in the Existing Scheme, will need to take **any one** of the **compulsory** subjects from the Revised Scheme of respective discipline, excluding the subjects in which such candidates are not permitted to appear as per Table 2. If no subject is available amongst the compulsory subjects in the Revised Scheme, they can opt the subject from any optional group, excluding subjects in which they are not permitted to appear as per Table 2.
- Candidates, who secure exemption in 8 (eight) or less subjects in the Existing Scheme, will need to select the requisite number [ie, Ten – (minus) number of subjects exempted from the Existing Scheme] of subjects. Such selection would be from the **compulsory** subjects first, including **Engineering Management (IC 402)**, if exemption is not secured in **Management of Systems (IC 02)** in Existing Scheme. After selection of compulsory subjects, remaining subject(s), if required, shall be opted from any optional groups. Selection of such subjects should be in conformity with Table 2.

Table 2

CHEMICAL ENGINEERING (Branch Code 04)

Existing Syllabi		Revised Syllabi	
Subject Exempted in Existing Scheme		Subject <i>cannot</i> be opted from the Revised Scheme	
Subject Code	Subject	Subject Code	Subject
IC 01*	Design and Manufacturing		NIL
IC 02	Management of Systems	IC 402	Engineering Management
CH 03	Chemical Reaction Engineering	CH 403	Chemical Reaction Engineering
CH 04	Transport Phenomena Fundamentals	CH 404	Transport Phenomena
CH 05	Chemical Engineering Thermodynamics	CH 405	Chemical Engineering Thermodynamics
CH 06	Process Calculations	CH 406	Chemical Process Principles
CH 07	Chemical Engineering Equipment Design	CH 407	Chemical Engineering Equipment Design
CH 11	Mass Transfer Operations	CH 411	Mass Transfer Operations

Existing Syllabi

Revised Syllabi

Subject Exempted in Existing Scheme

Subject *cannot* be opted from the Revised Scheme

Subject Code	Subject
CH 12	Heat Transfer Operations
CH 13	Mechanical Operations
CH 14	Chemical Process Technology
CH 15*	Process Control
CH 16/ 26*	Process and Project Engineering
CH 17	Fluid Mechanics
CH 18/ 28	Energy Engineering
CH 21	Polymer Technology
CH 22	Petrochemical Engineering
CH 23	Instrumentation and Control
CH 24	Fertilizer Technology
CH 25	Biochemical Engineering
CH 27	Industrial Pollution and Control

Subject Code	Subject
CH 412	Heat Transfer Operations
CH 413/ 423	Mechanical Operations
CH 424	Chemical Process Technology NIL
	NIL
CH 414	Fluid Mechanics
CH 421	Fuels and Combustion
CH 431	Polymer Materials and Technology
CH 432	Petrochemical Engineering
CH 415/ 425/435	Instrumentation and Control
CH 434	Fertilizer Technology
CH 422	Biochemical Engineering
CH 433	Industrial Pollution and Control

* There is no restriction of subjects for IC 01, CH 15 and CH 16/26 in Revised Scheme.

Illustrative Examples

CASE	SECURED EXEMPTION IN SUBJECTS IN EXISTING SCHEME	SUBJECTS CANNOT BE OPTED IN REVISED SCHEME	BALANCE SUBJECTS AVAILABLE TO OPT FROM REVISED SCHEME	SELECTION OF SUBJECTS IN REVISED SCHEME (as per item 2)
1	IC 01 CH 03 CH 05 CH 15 CH 16 (secured exemption in 5 subjects)	NO RESTRICTION CH 403 CH 405 NO RESTRICTION NO RESTRICTION	IC 402 CH 404 CH 406 CH 407 + SUBJECTS FROM OPTIONAL GROUPS (to opt 5 subjects out of the above)	IC 402, CH 404, CH 406 CH 407 + ONE SUBJECT FROM ANY OPTIONAL GROUP
2	IC 02 CH 07 CH 11 CH 18 (secured exemption in 4 subjects)	IC 402 CH 407 CH 411 CH 421	CH 403 CH 404 CH 405 CH 406 + SUBJECTS FROM OPTIONAL GROUPS EXCEPT CH 411 AND CH 421 BEING INELIGIBLE FOR OPTION (to opt 6 subjects out of the above)	CH 403, CH 404, CH 405, CH 406 + TWO SUBJECTS FROM OPTIONAL GROUPS EXCEPT CH 411 AND CH 421

CIVIL ENGINEERING (Branch Code 05)

Existing Syllabi

Subject Exempted in Existing Scheme

Subject Code	Subject
IC 01*	Design and Manufacturing
IC 02	Management of Systems
CV 03	Construction and Foundation Engineering
CV 04	Theory of Structures
CV 07	Structural Design
CV 05	Water Resources Engineering
CV 06	Surveying
CV 11/ 21/31*	Concrete Technology, Quantity Surveying and Valuation
CV 12	Town Planning and Landscape Architecture
CV 13/ 23/33*	Geotechnical Engineering
CV 14/ 34*	Advanced Surveying
CV 15	Environmental Engineering
CV 16*	Engineering for Rural Development
CV 22*	Irrigation Engineering and Hydraulic Structures
CV 24*	Applied Geology
CV 25/ 35	Advanced Structures
CV 26*	Fluid Mechanics and Hydraulic Machines
CV 32*	Railway Engineering
CV 36	Transportation Engineering

Revised Syllabi

Subject *cannot* be opted from the Revised Scheme

Subject Code	Subject
	NIL
IC 402	Engineering Management
CV 403	Civil Engineering Materials and Construction Practices and
CV 404	Geotechnical and Foundation Engineering
CV 407	Analysis and Design of Structures
CV 407	Analysis and Design of Structures
CV 405	Water Resources Systems
CV 406	Principles of Geoinformatics
	NIL
CV 433	Town Planning and Urban Development
	NIL
	NIL
CV 421	Principles of Environmental Engineering
	NIL
	NIL
	NIL
CV 411	Advanced Structural Analysis
	NIL
	NIL
CV 431	Transportation Engineering

* There is no restriction of subjects for IC 01, CV 11/21/31, CV 13/23/33, CV 14/34, CV 16, CV 22, CV 24, CV 26 and CV 32 in Revised Scheme.

Illustrative Examples

CASE	SECURED EXEMPTION IN SUBJECTS IN EXISTING SCHEME	SUBJECTS CANNOT BE OPTED IN REVISED SCHEME	BALANCE SUBJECTS AVAILABLE TO OPT FROM REVISED SCHEME	SELECTION OF SUBJECTS IN REVISED SCHEME (as per item 2)
1	CV 03 CV 04 CV 07 (secured exemption in 3 subjects)	CV 403 AND CV 404 CV 407 CV 407	IC 402 CV 405 CV 406 + SUBJECTS FROM OPTIONAL GROUPS (to opt 7 subjects out of the above)	IC 402, CV 405, CV 406 + FOUR SUBJECTS FROM OPTIONAL GROUPS
2	IC 01 CV 06 CV 12 CV 14/34 (secured exemption in 4 subjects)	NO RESTRICTION CV 406 CV 433 NO RESTRICTION	IC 402 CV 403 CV 404 CV 405 CV 407 + SUBJECTS FROM OPTIONAL GROUPS EXCEPT CV 433 BEING INELIGIBLE FOR OPTION (to opt 6 subjects out of the above)	IC 402, CV 403, CV 404, CV 405, CV 407 + ANY ONE SUBJECT FROM OPTIONAL GROUPS EXCEPT CV 433

COMPUTER SCIENCE AND ENGINEERING (Branch Code 06)

Existing Syllabi

Subject Exempted in Existing Scheme

Subject Code	Subject
IC 01*	Design and Manufacturing
IC 02	Management of Systems
CP 03	Data Structures
CP 04	Programming Languages
CP 05	Pulse and Digital Circuits
CP 06	Computer Architecture
CP 07*	Electronic Devices and Circuits
CP 11	Graph Theory and Combinational Logic
CP 12*	System Programming
CP 13	Theory of Computation
CP 14	Artificial Intelligence
CP 21*	Digital Hardware Design
CP 22	Computer Networks
CP 23*	Digital Electronics
CP 24	Microprocessor and Its Applications
CP 31	Operating Systems
CP 32*	Computer Peripherals and Interfaces
CP 34	Computer Graphics
CP 35	Software Engineering

Revised Syllabi

Subject *cannot* be opted from the Revised Scheme

Subject Code	Subject
	NIL
IC 402	Engineering Management
CP 403	Data Structures
CP 404	Programming Languages
CP 405	Pulse and Digital Circuits
CP 406	Computer Architecture
	NIL
CP 411	Graph Theory and Combinatorics
	NIL
CP 432	Theory of Computation
CP 414	Artificial Intelligence
	NIL
CP 412/ 422	Computer Networks
	NIL
CP 425	Microprocessors and Microcontrollers
CP 413/ 423/433	Operating Systems
	NIL
CP 424/ 434	Computer Graphics
CP 435	Software Engineering

* There is no restriction of subjects for IC 01, CP 07, CP 12, CP 21, CP 23 and CP 32 in Revised Scheme.

Illustrative Examples

CASE	SECURED EXEMPTION IN SUBJECTS IN EXISTING SCHEME	SUBJECTS CANNOT BE OPTED IN REVISED SCHEME	BALANCE SUBJECTS AVAILABLE TO OPT FROM REVISED SCHEME	SELECTION OF SUBJECTS IN REVISED SCHEME (as per item 2)
1	IC 01 CP 03 CP 05 CP 07 CP 12 CP 21 CP 32 (secured exemption in 7 subjects)	NO RESTRICTION CP 403 CP 405 NO RESTRICTION NO RESTRICTION NO RESTRICTION NO RESTRICTION	IC 402 CP 404 CP 406 CP 407 (to opt 3 subjects out of 4 above)	ANY THREE FROM IC 402, CP 404, CP 406, CP 407
2	IC 02 CP 03 CP 04 CP 05 CP 06 CP 07 CP 13 (secured exemption in 7 subjects)	IC 402 CP 403 CP 404 CP 405 CP 406 NO RESTRICTION CP 432	CP 407 + SUBJECTS IN OPTIONAL GROUPS EXCEPT CP 432 BEING INELIGIBLE FOR OPTION (to opt 3 subjects out of the above)	CP 407 + TWO SUBJECTS FROM OPTIONAL GROUPS EXCEPT CP 432

ELECTRICAL ENGINEERING (Branch Code 07)

Existing Syllabi Subject Exempted in Existing Scheme

Subject Code	Subject
IC 01*	Design and Manufacturing
IC 02	Management of Systems
EL 03	Power Systems
EL 04	Circuit and Field Theory
EL 05	Electrical Machines
EL 06	Control Systems
EL 07	Electrical Machine Design
EL 11/ 21/31*	Computer Engineering
EL 12*	Power Plant Engineering
EL 13	High Voltage Engineering
EL 14	Advanced Power Systems
EL 15/ 25*	Reliability Engineering and Terotechnology
EL 16*	Power System Protection and Communication
EL 17	Non-conventional Energy Systems
EL 22/ 32	Power Electronics
EL 23	Electrical Drives and Their Control
EL 24*	Electrical Engineering Materials
EL 26*	Machines for Special Applications
EL 27	Advanced Electrical Machines
EL 33*	Advanced Control Systems
EL 34	Microprocessor and Its Applications
EL 35*	Pulse and Digital Circuits
EL 36	Electronics and Electrical Measurements
EL 37*	Automation, Robotics and Numerical Control

Revised Syllabi Subject *cannot* be opted from the Revised Scheme

Subject Code	Subject
	NIL
IC 402	Engineering Management
EL 403	Power Systems
EL 404	Circuit and Field Theory
EL 405	Electrical Machines
EL 431	Control Theory
EL 407	Design of Electrical Systems
	NIL
	NIL
EL 413	High Voltage Engineering and Power Apparatus
EL 414	Power System Performance
	NIL
	NIL
EL 411	Energy System
EL 412/ 422/432	Power Electronics
EL 423	Electrical Drives
	NIL
	NIL
EL 421	Advanced Aspects of Electrical Machines
	NIL
EL 415/ 425/435	Microprocessors and Microcontrollers
	NIL
EL 406	Measurement and Control
	NIL

* There is no restriction of subjects for IC 01, EL 11/21/31, EL 12, EL 15/25, EL 16, EL 24, EL 26, EL 33, EL 35, EL 37 in Revised Scheme.

Illustrative Examples

CASE	SECURED EXEMPTION IN SUBJECTS IN EXISTING SCHEME	SUBJECTS CANNOT BE OPTED IN REVISED SCHEME	BALANCE SUBJECTS AVAILABLE TO OPT FROM REVISED SCHEME	SELECTION OF SUBJECTS IN REVISED SCHEME (as per item 2)
1	IC 01 IC 02 EL 05 EL 06 EL 21 EL 22 EL 27 (secured exemption in 7 subjects)	NO RESTRICTION IC 402 EL 405 EL 431 NO RESTRICTION EL 412/422/432 EL 421	EL 403 EL 404 EL 406 EL 407 (to opt 3 subjects out of the above)	ANY THREE FROM EL 403, EL 404, EL 406, EL 407
2	EL 06 EL 07 EL 33 EL 34 EL 36 (secured exemption in 5 subjects)	EL 431 EL 407 NO RESTRICTION EL 415/425/435 EL 406	IC 402 EL 403 EL 404 EL 405 + SUBJECTS IN OPTIONAL GROUPS EXCEPT EL 415/425/435 AND EL 431 BEING INELIGIBLE FOR OPTION (to opt 5 subjects out of the above)	IC 402, EL 403, EL 404, EL 405 + ANY ONE SUBJECT FROM OPTIONAL GROUPS EXCEPT EL 415/425/435 AND EL 431

ELECTRONICS AND COMMUNICATION ENGINEERING (Branch Code 08)

Existing Syllabi

Subject Exempted in Existing Scheme

Subject Code	Subject
IC 01*	Design and Manufacturing
IC 02	Management of Systems
ET 03	Communication Engineering
ET 04	Circuit and Field Theory
ET 05	Pulse and Digital Circuits
ET 06*	Electronics and Electrical Measurements
ET 07*	Electronic Devices and Circuits
ET 11	Broadcast and Television Engineering
ET 12	Radar and Radio Aids to Navigation
ET 13	Microwave Engineering
ET 14	Optical and Satellite Communication
ET 15*	Antenna and Wave Propagation
ET 16*	Carrier Current Engineering
ET 21	Digital Hardware Design
ET 22	Computer Networks
ET 23*	Digital Electronics
ET 24/ 34	Microprocessor and Its Applications
ET 25	Software Engineering
ET 26*	Computer Architecture
ET 31*	Computer Engineering
ET 32*	Power Electronics
ET 33	Medical Electronics
ET 35*	Technology of Electronic Devices
ET 36	Control Systems

Revised Syllabi

Subject *cannot* be opted from the Revised Scheme

Subject Code	Subject
	NIL
IC 402	Engineering Management
EC 403	Communication Engineering
EC 404	Circuit Theory and Control
EC 422	Pulse and Digital Circuits
	NIL
	NIL
EC 411	Broadcast and Television Engineering
EC 412	Radar and Antenna Engineering
EC 413	Microwave Engineering
EC 414	Optical and Satellite Communication
	NIL
	NIL
EC 421	Digital Hardware Design
EC 415	Computer Networks and Communication
	NIL
EC 405	Microprocessors and Microcontrollers
EC 425	Software Engineering
	NIL
	NIL
	NIL
EC 433	Biomedical Electronics
	NIL
EC 435	Control Systems

*There is no restriction of subjects for IC 01, ET 06, ET 07, ET 15, ET 16, ET 23, ET 26, ET 31, ET 32, ET 35 in Revised Scheme.

Illustrative Examples

CASE	SECURED EXEMPTION IN SUBJECTS IN EXISTING SCHEME	SUBJECTS CANNOT BE OPTED IN REVISED SCHEME	BALANCE SUBJECTS AVAILABLE TO OPT FROM REVISED SCHEME	SELECTION OF SUBJECTS IN REVISED SCHEME (as per item 2)
1	IC 01 ET 06 ET 07 ET 24 (secured exemption in 4 subjects)	NO RESTRICTION NO RESTRICTION NO RESTRICTION EC 405	IC 402 EC 403 EC 404 EC 406 EC 407 + SUBJECTS IN OPTIONAL GROUPS (to opt 6 subjects out of the above)	IC 402, EC 403, EC 404, EC 406, EC 407 + ANY ONE SUBJECT FROM OPTIONAL GROUPS
2	IC 01 IC 02 ET 05 ET 06 ET 23 ET 24/34 ET 26 (secured exemption in 7 subjects)	NO RESTRICTION IC 402 EC 422 NO RESTRICTION NO RESTRICTION EC 405 NO RESTRICTION	EC 403 EC 404 EC 406 EC 407 (to opt 3 subjects out of the above)	ANY THREE FROM EC 403, EC 404, EC 406, EC 407

MECHANICAL ENGINEERING (Branch Code 11)

Existing Syllabi

Subject Exempted in Existing Scheme

Subject Code	Subject
IC 01*	Design and Manufacturing
IC 02	Management of Systems
MC 03	Analysis and Synthesis of Machines
MC 04	Fluid Mechanics and Heat Transfer
MC 05	Thermal Science and Engineering
MC 06	Strength of Materials
MC 07	Design of Mechanical Systems
MC 11	Refrigeration and Air-conditioning
MC 12	Power Plant Engineering
MC 13*	Air Pollution and Its Control
MC 14	Internal Combustion Engines
MC 15	Turbomachinery
MC 16*	Fluid Power Engineering
MC 17	Non-conventional Energy Systems
MC 21/ 31*	Materials Handling
MC 22/ 32*	Computer Graphics and Product Design
MC 23/ 33*	Tribology
MC 24*	Technology of Machining Systems
MC 25	Industrial Engineering
MC 26	Manufacturing Technology
MC 27	Automation, Robotics and Numerical Control
MC 34*	Vibration Analysis
MC 35*	Reliability Engineering and Terotechnology
MC 36*	Composite Materials and Analysis
MC 37*	Design of Engineering Systems

*There is no restriction of subjects for IC 01, MC 13, MC 16, MC 21/31, MC 22/32, MC 23/33, MC 24, MC 34, MC 35, MC 36, MC 37 in Revised Scheme.

Revised Syllabi

Subject *cannot* be opted from the Revised Scheme

Subject Code	Subject
	NIL
IC 402	Engineering Management
MC 423	Analysis and Synthesis of Mechanisms and Machines
MC 404	Mechanics of Fluids
MC 405	Thermal Science and Engineering
MC 403	Mechanics of Solids
MC 421	Design of Mechanical Systems
MC 411	Refrigeration and Air-conditioning
MC 412	Power Plant Engineering
	NIL
MC 414	Internal Combustion Engines
MC 415	Turbomachinery
	NIL
MC 413	Non-conventional Energy Systems
	NIL
	NIL
MC 435	Production Management
MC 406	Manufacturing Technology
MC 434	Manufacturing Automation
	NIL
	NIL
	NIL
	NIL

Illustrative Examples

CASE	SECURED EXEMPTION IN SUBJECTS IN EXISTING SCHEME	SUBJECTS CANNOT BE OPTED IN REVISED SCHEME	BALANCE SUBJECTS AVAILABLE TO OPT FROM REVISED SCHEME	SELECTION OF SUBJECTS IN REVISED SCHEME (as per item 2)
1	IC 01 MC 03 MC 07 MC 25 MC 26 MC 27 (secured exemption in 6 subjects)	NO RESTRICTION MC 423 MC 421 MC 435 MC 406 MC 434	IC 402 MC 403 MC 404 MC 405 MC 407 (to opt 4 subjects out of the above)	ANY FOUR FROM IC 402, MC 403, MC 404, MC 405, MC 407
2	IC 02 MC 06 MC 12 MC 13 MC 16 (secured exemption in 5 subjects)	IC 402 MC 403 MC 412 NO RESTRICTION NO RESTRICTION	MC 404 MC 405 MC 406 MC 407 + SUBJECTS IN OPTIONAL GROUPS EXCEPT MC 412 BEING INELIGIBLE FOR OPTION (to opt 5 subjects out of the above)	MC 404, MC 405, MC 406, MC 407 + ANY ONE SUBJECT FROM OPTIONAL GROUPS EXCEPT MC 412

MATERIALS AND METALLURGICAL ENGINEERING (Branch Code 12)

Existing Syllabi		Revised Syllabi	
Subject Exempted in Existing Scheme		Subject <i>cannot</i> be opted from the Revised Scheme	
Subject Code	Subject	Subject Code	Subject
IC 01*	Design and Manufacturing		NIL
IC 02	Management of Systems	IC 402	Engineering Management
MM 03	Metallurgical Thermodynamics and Kinetics	MM 403	Metallurgical Thermodynamics and Kinetics
MM 04	Extractive Metallurgy	MM 404	Extractive Metallurgy
MM 05	Mechanical Behaviour of Materials	MM 405	Mechanical Behaviour of Materials
MM 06	Physical Metallurgy	MM 406	Physical Metallurgy
MM 07	Metallurgical Design	MM 407	Metallurgical Design
MM 11	Mineral Dressing	MM 411	Mineral Engineering
MM 12*	Metallurgical Analysis		NIL
MM 13/ 23	Instrumentation and Control	MM 415	Instrumentation and Control
MM 14/ 24	Materials Characterisation	MM 424	Materials Characterisation
MM 15	Ferrous Extractive Metallurgy	MM 413	Ferrous Extractive Metallurgy
MM 16	Non-ferrous Extractive Metallurgy	MM 414	Non-ferrous Extractive Metallurgy
MM 17	Electrometallurgy and Corrosion	MM 422	Electrometallurgy and Corrosion
MM 18	Fuels, Furnaces and Refractories	MM 412	Fuels, Furnaces and Refractories
MM 21	Foundry Engineering	MM 434	Foundry Engineering
MM 22	Welding and Allied Processes	MM 432	Welding and Allied Processes
MM 25*	Powder Processing		NIL
MM 26	Mechanical Working and Testing	MM 435	Mechanical Working Processes
MM 27	Corrosion Science and Engineering	MM 422	Electrometallurgy and Corrosion
MM 28	Advanced Physical Metallurgy	MM 423/ 433	Advanced Physical Metallurgy

* There is no restriction of subjects for IC 01, MM 12 and MM 25 in Revised Scheme.

Illustrative Examples

CASE	SECURED EXEMPTION IN SUBJECTS IN EXISTING SCHEME	SUBJECTS CANNOT BE OPTED IN REVISED SCHEME	BALANCE SUBJECTS AVAILABLE TO OPT FROM REVISED SCHEME	SELECTION OF SUBJECTS IN REVISED SCHEME (as per item 2)
1	IC 01 MM 12 MM 13 MM 14 (secured exemption in 4 subjects)	NO RESTRICTION NO RESTRICTION MM 415 MM 424	IC 402 MM 403 MM 404 MM 405 MM 406 MM 407 (to opt 6 subjects as given above)	IC 402, MM 403, MM 404, MM 405, MM 406 AND MM 407
2	IC 02 MM 04 MM 05 MM 14/24 MM 25 (secured exemption in 5 subjects)	IC 402 MM 404 MM 405 MM 424 NO RESTRICTION	MM 403 MM 406 MM 407 + SUBJECTS FROM OPTIONAL GROUPS EXCEPT MM 424 BEING INELIGIBLE FOR OPTION (to opt 5 subjects out of the above)	MM 403, MM 406, MM 407 + ANY TWO SUBJECTS FROM OPTIONAL GROUPS EXCEPT MM 424

MINING ENGINEERING (Branch Code 13)

Existing Syllabi Subject Exempted in Existing Scheme

Subject Code	Subject
IC 01*	Design and Manufacturing
IC 02	Management of Systems
MN 03	Mining Geology, Mineral Deposits and Exploration
MN 04	Mining Methods — Surface and Underground Mining
MN 05	Mine Environment and Mine Hazards
MN 06	Mining Machinery
MN 07	Design of Open Pit and Underground Mines
MN 11	Rock Mechanics and Ground Control
MN 12	Mine Systems Engineering
MN 13	Advanced Methods of Underground Working
MN 21*	Mineral Dressing
MN 22	Mining and Environment
MN 23	Mine Surveying
MN 31	Mine Management, Legislation and Safety
MN 32	Mine Valuation and Mineral Economics
MN 33*	Rock Excavation Engineering

*There is no restriction of subject for IC 01 and MN 21 in Revised Scheme.

Revised Syllabi Subject *cannot* be opted from the Revised Scheme

Subject Code	Subject
	NIL
IC 402	Engineering Management
MN 403	Mining Geology and Development of Mineral Deposits
MN 404	Exploitation of Mineral Deposits
MN 406	Mine Ventilation and Environmental Hazards
MN 405	Mining Machinery and Material Handling
MN 407	Geomechanics and Mine Design
MN 431	Advanced Rock Mechanics
MN 421	Mine Systems Engineering
MN 432	Advanced Methods of Mining
	NIL
MN 412	Environmental Pollution and Control in Mines
MN 414/ 434	Mine Surveying
MN 415/ 425/435	Mine Management and Legislation
MN 422	Economics of Mining Enterprises
MN 433	Mine Planning and Excavation

Illustrative Examples

CASE	SECURED EXEMPTION IN SUBJECTS IN EXISTING SCHEME	SUBJECTS CANNOT BE OPTED IN REVISED SCHEME	BALANCE SUBJECTS AVAILABLE TO OPT FROM REVISED SCHEME	SELECTION OF SUBJECTS IN REVISED SCHEME (as per item 2)
1	IC 01 MN 05 MN 06 (secured exemption in 3 subjects)	NO RESTRICTION MN 406 MN 405	IC 402 MN 403 MN 404 MN 407 + SUBJECTS IN OPTIONAL GROUPS (to opt 7 subjects out of the above)	IC 402, MN 403, MN 404, MN 407 + ANY THREE SUBJECTS FROM OPTIONAL GROUPS
2	IC 02 MN 03 MN 07 MN 21 MN 22 MN 23 (secured exemption in 6 subjects)	IC 402 MN 403 MN 407 NO RESTRICTION MN 412 MN 414/434	MN 404 MN 405 MN 406 + SUBJECTS FROM OPTIONAL GROUPS EXCEPT MN 412 AND MN 414/434 BEING INELIGIBLE FOR OPTION (to opt 4 subjects out of the above)	MN 404, MN 405, MN 406 + ONE SUBJECT FROM OPTIONAL GROUPS EXCEPT MN 412 AND MN 414/434

PRODUCTION ENGINEERING (Branch Code 14)

Existing Syllabi		Revised Syllabi	
Subject Exempted in Existing Scheme		Subject <i>cannot</i> be opted from the Revised Scheme	
Subject Code	Subject	Subject Code	Subject
IC 01*	Design and Manufacturing		NIL
IC 02	Management of Systems	IC 402	Engineering Management
PR 03*	Analysis and Synthesis of Machines		NIL
PR 04*	Technology of Machining Systems		NIL
PR 05	Industrial Engineering	PR 421	Facility Planning, Design and Maintenance
PR 06	Manufacturing Technology	PR 406	Manufacturing Technology
PR 07*	Design of Engineering Systems		NIL
PR 11/ 21	Inspection and Product Control	PR 415	Inspection and Product Control
PR 12/ 22*	Computer Graphics and Product Design		NIL
PR 13	Project Planning and Appraisal	PR 422	Project Management
PR 14	Production Management	PR 405	Production Management
PR 15*	Reliability Engineering and Terotechnology		NIL
PR 16*	Industrial Statistics		NIL
PR 17	Operations Research	PR 424/ 434	Operations Research
PR 23	Design of Machine Tools	PR 414	Design of Machine Tools
PR 24*	Technology of Mass Production		NIL
PR 25	Manufacturing Science	PR 411	Manufacturing Science
PR 26	Computer Aided Manufacturing	PR 412/ 432	Computer Aided Manufacturing
PR 27	Automation, Robotics and Numerical Control	PR 404	Manufacturing Automation

* There is no restriction of subjects for IC 01, PR 03, PR 04, PR 07, PR 12/22, PR 15, PR 16, PR 24 in Revised Scheme.

Illustrative Examples

CASE	SECURED EXEMPTION IN SUBJECTS IN EXISTING SCHEME	SUBJECTS CANNOT BE OPTED IN REVISED SCHEME	BALANCE SUBJECTS AVAILABLE TO OPT FROM REVISED SCHEME	SELECTION OF SUBJECTS IN REVISED SCHEME (as per item 2)
1	IC 02 PR 03 PR 05 PR 14 (secured exemption in 4 subjects)	IC 402 NO RESTRICTION PR 421 PR 405	PR 403 PR 404 PR 406 PR 407 + SUBJECTS IN OPTIONAL GROUPS EXCEPT PR 421 BEING INELIGIBLE FOR OPTION (to opt 6 subjects out of the above)	PR 403, PR 404, PR 406, PR 407 + ANY TWO SUBJECTS FROM OPTIONAL GROUPS EXCEPT PR 421
2	IC 01 PR 04 PR 07 PR 24 PR 27 (secured exemption in 5 subjects)	NO RESTRICTION NO RESTRICTION NO RESTRICTION NO RESTRICTION PR 404	IC 402 PR 403 PR 405 PR 406 PR 407 (to opt 5 subjects as given above)	IC 402, PR 403, PR 405, PR 406, PR 407

TEXTILE ENGINEERING (Brance Code 15)

Existing Syllabi
Subject Exempted in Existing Scheme

Subject Code	Subject
IC 01*	Design and Manufacturing
IC 02	Management of Systems
TX 03	Fabric Manufacture and Design
TX 04	Textile Fibres and Testing
TX 05	Yarn Manufacture
TX 06	Chemical Processing and Finishing
TX 07	Design of Textile Systems
TX 11	Advanced Yarn Manufacture
TX 12	Modern Yarn Production
TX 13/ 23/33/ 43	Modern Fabric Production and Knitting
TX 14/ 24/34/ 44	Engineering Design of Textile Structures
TX 15/ 25/35/ 45	Chemistry and Technology of Man-made Fibres
TX 21*	Advanced Fabric Manufacture
TX 22*	Fabric Structure
TX 31*	Advanced Dyeing and Printing
TX 32*	Advanced Finishing
TX 41	Mechanics of Textile Machinery
TX 42	Mill Organisation and Process Economics

Revised Syllabi
Subject cannot be opted from the Revised Scheme

Subject Code	Subject
	NIL
IC 402	Engineering Management
TX 405	Fabric Manufacture and Design
TX 403	Textile Fibres and Testing
TX 404	Yarn Manufacture
TX 406	Chemical Processing and Finishing
TX 407	Design and Mechanisms of Textile Machines
TX 411	Advanced Yarn Manufacture
TX 412	Modern Yarn Production and Control Systems
TX 422	Non-woven, Knitting and Industrial Fabrics
TX 413/ 423	Engineering Design of Textile Structures
TX 433	Chemistry and Technology of Man-made Fibres
	NIL
	NIL
	NIL
	NIL
TX 414/ 424	Textile Machinery and Maintenance
TX 415/ 425/435	Mill Organisation, Process Economics and Quality Control

*There is no restriction of subjects for IC 01, TX 21, TX 22, TX 31, TX 32 in Revised Scheme.

Illustrative Examples

CASE	SECURED EXEMPTION IN SUBJECTS IN EXISTING SCHEME	SUBJECTS CANNOT BE OPTED IN REVISED SCHEME	BALANCE SUBJECTS AVAILABLE TO OPT FROM REVISED SCHEME	SELECTION OF SUBJECTS IN REVISED SCHEME (as per item 2)
1	TX 03 TX 04 TX 05 TX 15/25/35/45 (secured exemption in 4 subjects)	TX 405 TX 403 TX 404 TX 433	IC 402 TX 406 TX 407 + SUBJECTS IN OPTIONAL GROUPS EXCEPT TX 433 BEING INELIGIBLE FOR OPTION (to opt 6 subjects out of the above)	IC 402, TX 406, TX 407 + ANY THREE SUBJECTS FROM OPTIONAL GROUPS EXCEPT TX 433
2	IC 01 IC 02 TX 04 TX 05 TX 11 (secured exemption in 5 subjects)	NO RESTRICTION IC 402 TX 403 TX 404 TX 411	TX 405 TX 406 TX 407 + SUBJECTS IN OPTIONAL GROUPS EXCEPT TX 411 BEING INELIGIBLE FOR OPTION (to opt 5 subjects out of the above)	TX 405, TX 406, TX 407 + ANY TWO SUBJECTS FROM OPTIONAL GROUPS EXCEPT TX 411