राष्ट्रीय प्रौद्योगिकी संस्थान हमीरपुर
हमीरपुर (हि.प्र.) – 177 005 (भारत)
[ भारत सरकार शिक्षा मंत्रालय के तहत एक राष्ट्रीय महत्व का संस्थान ]
NATIONAL INSTITUTE OF TECHNOLOGY HAMIRPUR
HAMIRPUR (H.P.) - 177 005 (INDIA)
[An Institute of National Importance under Ministry of Education (Shiksha Mantralaya)]

# NOTICE

On the recommendations of the ACoNFAR dated 17-18/02/2026, 02/03/2026 & 06/03/2026 & DPC dated 06/03/2026 and subsequent approval of the competent authority, the final list of the provisionally ***Eligible & Ineligible candidates*** for promotion to various non-teaching post(s) as per RRs-2014/2019 is hereby notified for information of all concerned, against notification no. NIT/HMR/Admn/Promotion-2026/791-795 dated 22.01.2026 & Corrigendum dated 05/02/2026.

## LIST OF ELIGIBLE CANDIDATES FOR NEXT STAGE

| Sr. No. | Name of the Post | Name & Designation of applicant | Cat. | Remarks |
|---|---|---|---|---|
| **A)** | **OFFICER CADRE** | | | |
| 1 | Assistant Registrar GP 5400 (Level -10) | Sh. Pritam Chand Rangra (Superintendent SG-I) | UR | Provisionally Eligible |
| **B)** | **MINISTERIAL HIGHER CADRE** | | | |
| 1 | Superintendent SG-I GP 5400 (Level - 09) | Sh. Raman Kumar (Superintendent SG-II) | UR | Provisionally Eligible |
| 2 | Senior Superintendent GP 4600 (Level -7) | Sh. Surinder Singh (Superintendent) | UR | Provisionally Eligible |
| **C)** | **MINISTERIAL LOWER CADRE** | | | |
| 1 | Stenographer (SG-I) GP 4200(Level- 06) | Ms. Sangeeta Kumari (Steno SG-II) | SC | Provisionally Eligible |
| | | Sh. Vinod Kumar (Steno SG-II) | UR | Provisionally Eligible |
| 2 | Assistant (SG-II) GP 2800 (Level -5) | Sh. Vishal Narota (Senior Assistant) | SC | Provisionally Eligible |
| | | Sh. Vipan Kumar-I (Senior Assistant) | OBC | Provisionally Eligible |
| | | Sh. Vipan Kumar-II (Senior Assistant) | UR | Provisionally Eligible |

| | | | | |
|---|---|---|---|---|
| | | Sh. Shashi Kant Ratnakar (Senior Assistant) | OBC | Provisionally Eligible |
| | | Sh. V. K. Tippan (Senior Assistant) | OBC | Provisionally Eligible |
| | | Sh. Neenu Sharma (Senior Assistant) | UR | Provisionally Eligible |
| 3 | Senior Assistant GP 2400 (Level- 04) | Sh. Suresh Kumar (Junior Assistant) | OBC | Provisionally Eligible |
| | | Sh. Ravi Dass (Junior Assistant) | OBC | Provisionally Eligible |
| | | Sh. Ashok Kumar (Junior Assistant) | SC PwD | Provisionally Eligible |
| 4 | Junior Assistant GP 2000 (Level- 03) | Sh. Balwant Chand (Office Attendant SG-II) | UR | Provisionally Eligible |
| | | Sh. Mukesh Singh (Office Attendant SG-II) | UR | Provisionally Eligible |
| | | Sh. Vinod Kumar (Office Attendant SG-II) | UR | Provisionally Eligible |
| **D)** | **TECHNICAL HIGHER CADRE** | | | |
| 1 | Technical Assistant (SG-I) GP 5400 (Level -9) | Sh. Avinash Agarwal (Technical Assistant SG-II) | UR | Provisionally Eligible |
| | | Sh. Santosh Kumar (Technical Assistant SG-II) | SC | Provisionally Eligible |
| | | Sh. Dev Raj (Technical Assistant SG-II) | UR | Provisionally Eligible |
| | | Sh. Sanjeev Kumar Thakur (Technical Assistant SG-II) | UR | Provisionally Eligible |
| 2 | Technical Assistant (SG-II) GP 4800 (Level – 08) | Dr. Ashok Kumar Senior Technical Assistant | SC PwD | Provisionally Eligible |
| 3 | Senior Technical Assistant GP 4600 (Level – 07) | Kalyan Singh Technical Assistant | SC | Provisionally Eligible |
| | | Desh Raj Technical Assistant | UR | Provisionally Eligible |

# LIST OF CANDIDATES INELIGIBLE FOR NEXT STAGE

| Sr. No. | Name of the Post | Name & Designation of Applicant | Cat. | Reason |
|---|---|---|---|---|
| 1 | Executive Engineer GP 5400 (Level-10) | Rajesh Sharma (Assistant Engineer SG-I) | UR | Not Eligible, due to non Fulfilling Educational Qualification of Bachelor's degree in Civil or Electrical Engineering. |
| | | Prakash Singh (Technical Assistant SG-I) | UR | Retired on 28.02.2026 |
| 2 | Superintendent GP 4200 (Level-06) | Sh. Raman Thakur (Assistant SG-I) | UR | Not Eligible, due to non fulfilment of 02 Years Post residency requirement as ASG -I. |
| 3 | Senior Personal Assistant GP 4600 (Level-07) | Smt. Pushpa Devi (Personal Assistant) | SC | No post advertised as per Corrigendum dated 05.02.2026. Hence, shall not be considered for next stage of Promotion. |
| 4 | Personal Assistant GP 4200 (Level-06) | Ms. Sangeeta Kumari (Stenographer SG-II) | SC | No post advertised as per Corrigendum dated 05.02.2026. Hence, shall not be considered for next stage of Promotion. |
| | | Sh. Vinod Kumar (Stenographer SG-II) | UR | |
| 5 | Assistant SG-I GP 4600 (Level-06) | Sh. Madan Lal (Assistant SG-II) | SC | No post under UR & SC Quota available. Hence, shall not be considered for next stage of Promotion. |
| 6 | Technical Assistant GP 4200 (Level-06) | Sh. Chet Ram (Technician SG-I) | ST | Not Eligible, due to non fulfilment of 02 Years Post residency requirement as Technician SG -I. |
| 7 | Technician SG-I GP 4200 (Level-06) | Sh. Sunil Kumar (Technician SG-II) | OBC | No post advertised as per Corrigendum dated 05.02.2026. Hence, shall not be considered for next stage of Promotion. |
| 8 | Senior Technician GP 2800 (Level-04) | Sh. Suresh Chand (Office Attendant SG-I) | UR | Not Eligible, due to non fulfilment of 05 Years Post residency requirement as Technician OR 05 Years Combined Service of Technician & Lab Attendant SG-II. |
| 9 | Technician GP 2000 (Level-03) | Sh. Suresh Chand (Office Attendant SG-I) | UR | |

| | | | | |
|---|---|---|---|---|
| | | Sh. Suresh Kumar (Office Attendant SG-I) | UR | Not Eligible, due to non fulfilment of 02 Years Post residency requirement as Lab Attendant SG-II. |
| | | Sh. Roshan Lal (Office Attendant SG-II) | SC | |
| | | Sh. Om Prakash (Office Attendant SG-II) | UR | |
| | | Sh. Sunil Kumar (Office Attendant SG-II) | UR | |
| | | Sh. Subhash Chand (Office Attendant SG-II) | UR | |
| | | Sh. Mukesh Singh (Office Attendant SG-II) | UR | |

Further, the Written Examination of the ***provisionally eligible/shortlisted candidates*** for promotion to the following **Officers, Ministerial & Technical Higher/Lower Cadres** of non-teaching posts shall be conducted as per schedule given below:

| Sr. No. | Post / Cadre | Date | Reporting Time | Venue |
|---|---|---|---|---|
| 1 | Officer Cadre | **13/03/2026 at 10:00 AM** | **13/03/2026 at 09:30 AM** | **Conference Hall, Admin. Block, NIT Hamirpur (HP)** |
| 2 | Ministerial Cadre (Higher & Lower) Posts | | | |
| 3 | Technical Cadre | | | |

**General Instructions & Scheme for the Written Examination:-**

1. The duration of the examination shall be 90 Minutes.
2. The scheme of written examination shall be as under:
   i. There will be 30 MCQ type questions in SECTION-I (MCQs) of the paper and each question shall be followed by four alternative answer options namely A. B. C and D out of which only one option is correct. The Candidates need to tick the correct one out of four options given.

   ii. For every correct answer of MCQ in **SECTION-I (For Officer, Ministerial & Technical Higher/Lower Cadres)** of the paper two (2) marks will be awarded and there shall be no negative marking.

   iii. A). In **SECTION-II (Descriptive) (For Technical Higher & Lower Cadres):** There will be 20 descriptive type questions, and each question will carry 02 marks. The Candidate needs to write answer neatly with clarity of thoughts in maximum 2 – 3 lines at the space provided below each question.

   B). In **SECTION-II (Descriptive) (For Officer, Ministerial Higher & Lower Cadres):** There shall be 08 Descriptive Type Questions, and each question shall carry 05 marks with total 40 marks.

3. The Candidates will use only **BLUE** pen to answer all the questions.
4. The Mobile Phones are strictly prohibited.

5. For rough work use the blank page given at end. No extra sheets shall be provided in any circumstances.
6. Use of Unfair means will lead to cancelation of candidature. Do not carry any loose paper.
7. Return the booklet to the Invigilator after completing the examination.

**The Post-wise Syllabus for the Written Examination shall be as per Annexure-I.**

**Note:** ***For Next stage of promotion, all the eligible Officer/Officials applied/shortlisted for promotion to the post(s) carrying Grade Pay 4800/Level -08 & ABOVE are required to appear before the Selection Committee(s) for Personal Interview as per RRs/MoE instructions, for which call letters shall be issued separately.***

**REGISTRAR**

No. NIT/HMR/Admn/Promotion-2026/2026/ 2193-96 Dated: 06/03/2026

Copy to:

1. Director for his kind information.
2. Prof. Ravi Kumar, Chairman (ACoNFAR) for information.
3. All Deans, Heads, Branch/Section Heads for circulation in the respective department/section for information of the concerned.
4. FI(CC) for uploading the Notice on the Institute website as floating announcement, for information all individuals

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## Syllabus for Written Test to the post of Assistant Registrar, Pay Level -10

| S. No. | Name of the Topic | Contents |
|---|---|---|
| 1 | **General Knowledge and Current Affairs** | History, Geography and economy of India Economy of India, Constitution of India; Current National and International events. Computer Knowledge & PFMS. |
| 2 | **Maths & Numerical Ability** | Maths & Numerical Ability: Averages, Profit and Loss, Time and Work, Simple Interest, Compound Interest, Decimal Fractions, Problems on Numbers, Square Root and Cube Root, Time and Distance, Simplifications, Problems on H.C.F and L.C.M, Numerical Computation, Algebra, Mensuration, Geometry etc. |
| 3 | **Logical Reasoning** | Number Series Compilation, Missing Number Finding, Continuous Pattern Series, Matching Definitions, Missing Character Finding, Odd Man Out, Blood Relations, Coding and Decoding, Logical Sequence of Words, Arithmetic Reasoning, Letter and Symbol Series, Numerical Reasoning, Data Reasoning and Data Interpretation. etc. |
| 4 | **Language & Comprehension** | Antonyms, Synonyms, Spelling Check, Common Error Detection, one word substitute, correct option, Grammatical error, Change of voice, Narration, Idioms and Phrases, English Grammar, Sentence Correction and Completion, Paragraph Summary, Reading Comprehension & Inferences, Spotting Errors, Sentence Improvement, Communication Skills, Sentence Formation. |
| 3 | **Computer Fundamentals** | MS Word, MS Excel, Power Point, Internet, Email System. |
| 4 | Letter, Note Drafting, Office Order, Circulars. | |

| | | |
|---|---|---|
| 5 | **Service Matters** | FR & SR, LTC Rules, Leave Rules, CCS Conduct Rules, TA/DA Rules, Medical Attendance Rules, Disciplinary & Vigilance, RTI Act, Office Procedure, etc., DPC, Pay Fixation, Seniority, Legal Matters, Foreign Service, Deputation, Labour Laws, Service Rules, New Pension Scheme. |
| 6 | **Financial Administration** | General Financial Rules (GFR), Elementary knowledge of Income Tax, GST Rules, Knowledge of PFMS, Accountancy, Receipt & Payment, Budget, Commercial Accounts, Roles & Functions of (CAG), Accounting and Grant in Aid, Financial Statement of Central and Autonomous Bodies. |
| 7 | **Public Procurement** | Procurement of Goods and Services, GeM Rules and Procedures, Central Public Procurement Portal: Tendering, Procuring, etc., Contract Management, Inventory Management, Procurement Manuals. |
| 8 | NIT Acts and Statutes, NITSER Act, Role and functions of BOG, Finance Committee, Building and Works Committee and Senate; NIT Council; Powers and Functions of Director, Registrar, Recruitment Rules for Faculty and Non-faculty, Reservation in Service Rules. | |
| 9 | **Academics** | Admission and Registration procedures; Senate and its powers, Board of Studies (BOS), Unfair Means Cases (UMC), Grade Point System, Curriculum Structure for UG & PG, Scholarships. |

**NATIONAL INSTITUTE OF TECHNOLOGY HAMIRPUR (HP)-177005**

**Syllabus for Written Test for the Post of**

**MINISTERIAL HIGHER AND LOWER CADRE POSTS**

| Sr. No. | Topic | Contents |
|---|---|---|
| 1. | **Broad Administrative structure of NIT system.** | a) Special reference to NIT Act-2007/NITSER Act-2012; Statute; Role and Function of Board, Finance Committee, Buildings and Works Committee, Senate and NITSER Council.<br>b) Roles and Responsibilities of Chairman BOG, Director, Deputy Director, Registrar, Deans etc. |
| 2. | **Academic Administration** | a) International Ranking, its frameworks etc.<br>b) Broad idea about Admission, Registration, Credit System and Academic Programmes offered by Institute.<br>c) Examination System.<br>d) Ordinances for UG, PG and PhD programmes.<br>e) Conduct and Discipline Rules of Students, Rules for unfair means in examination, Scholarship, Medal and Prizes for the students.<br>f) Senate and Convocation matters<br>g) Reservation in admissions to UG, PG, PhD programmes |
| 3. | **Leave/Vacation:** | a) CCS (Leave) Rules<br>b) Type of leave and terms & conditions of its grant.<br>c) Accumulation of Leave.<br>d) Procedure for grant of leave. |
| 4. | **Disciplinary Procedures** | a) CCS(Conduct) Rules<br>b) CCS(CCA) Rules<br>c) Procedure for disciplinary actions. |
| 5. | Pension Rules and Retirement Benefits, Gratuity, GPF, CPF, NPS, MACP, DPC etc. | |
| 6. | **Purchasing** | a) Purchasing Principles GFR-2017.<br>b) Various purchasing Systems etc. GeM Rules and Central Public Procurement Portal. |
| 7. | TA/DA Rules, Income Tax Rules, LTC Rules, Medical Rules, Joining time rules, Rules of Deputation & Lien, Reservation in appointment, Recruitment Rules in NITs for faculty and non-faculty members. | |
| 8. | RTI Act, knowledge of basic laws, Various Policies of the Institute etc. | |

**National Institute of Technology Hamirpur (HP) 177005**

**Syllabus for Written Test for the post of**

**Technical Assistant SG-I**

**Mechanical Engineering**

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1. Knowledge about coolants/fluids used in different machining operations.
2. Knowledge about non-conventional machining methods and machines.
3. Welding: Arc welding, gas welding, TIG & MIG welding, Brazing and soldering, welding defects.
4. Turning: Basic principle of turning, description and specification of lathe machine, operations on lathe e.g. turning, taper turning, knurling, thread cutting etc.
5. Sheet Metal Shop: Tools, operations and basic processes like marking, folding and seaming.
6. Machining: Metal cutting principles, cutting tools, basic principles of machining with milling and drilling, shaping machine, grinding machine etc.
7. CNC Operation Components and function of CNC operation, handling of CNC machines.
8. Casting and Foundry shop: Terminology, Tools and operations.
9. Metrology: Inspection, Linear and angular measurement, Measurement of surface finish, Measurement of Screw threads and gauges and related lab experiment.
10. Knowledge of kinematics/ Dynamics of machines and lab experiments related to them.
11. Knowledge of Robotics & Automation and lab experiments related to them.
12. Knowledge of IC engine, Type, Cycle, Performance, Emission.
13. Knowledge of Heat transfer, types of heat transfer and lab experiment related to them.
14. Knowledge of Fluid Mechanics & Machinery and lab experiments related to them.
15. Knowledge of Refrigeration and Air conditioning and lab experiments related to them.
16. Knowledge of Mechanics of solids and lab experiments related to them.
17. Knowledge of Tribology and lab experiments related to them.

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**National Institute of Technology Hamirpur (HP) 177005**

**Syllabus for Written Test for the post of**

**Technical Assistant SG-I**

**Central Workshop**

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1. Knowledge about workshop tools for various shops, various machines, tools and materials used in different shops.
2. Knowledge about coolants/fluids used in different machining operations.
3. Knowledge about fixing and mounting of jobs in various machines
4. Knowledge about power operated hand tools.
5. Knowledge about non-conventional machining methods and machines.
6. Fitting tools and operations, Plumbing tools and pipe fittings
7. Welding: Arc welding, gas welding, TIG & MiG welding, Brazing and soldering, welding defects
8. Turning: Basic principle of turning, description and specification of lathe machine, operations on lathe e.g. turning, taper turning, knurling, thread cutting etc.
9. Carpentry: Wood types, working tools, operations of wood working machineries.
10. Sheet Metal Shop: Tools, operations and basic processes like marking , folding and seaming.
11. Machining: Metal cutting principles, cutting tools, basic principles of machining with milling and drilling, shaping machine, grinding machine etc.
12. CNC Operation Components and function of CNC operation, handling of CNC machines.
13. Measurement Instruments, Measurements of Screw threads and Gauges.
14. Casting and Foundry shop: Terminology, Tools and operations

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# National Institute of Technology Hamirpur

## Syllabus for the Post of Technical Assistant (SG-I)
## (Computer Science and Engineering)

**Computer Fundamentals:** Components of computer system, Input and output devices, Basic HTML tags, HTML tags and CSS, Basics of Database, SQL Servers, File systems (NTFS, FAT, ext2, ext3), Concepts of Microsoft Word, Excel, PowerPoint.

**System Maintenance and troubleshooting:** Fundamentals of Operating System, Windows and Linux OS installation procedures, dual boot, reserving space for user/system while installing OS - Troubleshooting, device drivers, hardware troubleshooting.

**Programming Languages:** Algorithm, Flowchart, Concepts of C,C++, Java and Python programming languages, Data types, Variables, Operators, Expressions, Input & Output, Control statements.

**Computer Networks:** OSI and TCP/IP Protocol Stacks, Ethernet cable (types, Colour codes), OFC cable types. Configuration of WIFI and Bluetooth, Troubleshooting in networks. IP addressing, IPv4, subnetting, Class less addressing.

# NATIONAL INSTITUTE OF TECHNOLOGY HAMIRPUR (HP)
## Department of Electronics & Communication Engineering

### SYLLABUS FOR WRITTEN TEST
### POST NAME: TECHNICAL ASSISTANT SG – II

***BASIC ELECTRONICS***

Semiconductor Basics & Devices – PN Junction/ Zener Diodes, Bipolar Junction Transistor, Metal Oxide Semiconductor Field Effect Transistor and its Characteristics, Rectifier Circuits, BJT Biasing, Different Configurations – Common Emitter, Common Collector, Common Base.
Current & Voltage gains, Load Line Analysis, Applications of Transistor as Switch and Amplifier, Multistage Amplifier Circuits, Feedback Amplifiers.

***Digital Electronics***

Different Number Systems and Conversions – Decimal, Binary, Octal, Hexadecimal, Karnaugh Maps.
Boolean Algebra, Logic gates – Types & Truth Table.
Universal Logic Gates – NAND and NOR gates, Logic Families.
Combinational Logic Circuits – Adders and Subtractors, Comparators, Multiplexers and De-multiplexers, Encoders and Decoders.
Sequential Logic Circuits – Flip Flops, Registers and Synchronous / Asynchronous counters – Common Types & Configurations.

***Linear Integrated Circuits***

Operational Amplifiers – Basics, Characteristics, Inverting and Non-inverting Configurations, Applications as Amplifier, Filters, Oscillators, Comparators, Instrumentation Amplifier, Schmitt Trigger, Timer IC and Phase Locked Loop, Voltage Regulators, Analog to Digital Converters and Digital to Analog Converters.
Wave Shaping circuits – RC Differentiator & Integrator, Clipper, Clamper, Voltage Doubler.

***Instrumentation***

Basic Measuring Instruments and Applications – Permanent Magnet Moving Coil Instruments (PMMC), Moving Iron-type Instruments (MI), Electro Dynamo Type Instruments.
Electronic Instruments and Applications – Voltmeters, Multimeters, Meggers, Oscilloscopes, Signal Generators, LCR meters, Wheatstone Bridge Circuits.
Working Principles and Application of Transducers – LVDT, Strain Gauge, Potentiometer, Thermistor, Thermocouple, RTD, Piezoelectric.

***Communication Engineering***

Propagation of Waves, Antenna – Basics, Radio Receivers.
Communication Methods – Amplitude Modulation, Frequency Modulation, Phase Modulation, AM/FM Transmitters and Receivers, Digital Modulation Techniques – ASK, PSK, FSK, QPSK, Pulse Modulation, Sampling theorem.
Fibre Optic Communications, Satellite Communication.
Basics of Wireless and Mobile Communication.
Microwave Devices, Wave Guides, Microwave Components, Microwave Antennas, Microwave Communication Systems.

***Microprocessor and Microcontroller***

Evolution of Microprocessor, Microprocessor Basics, Architecture of Microprocessor, Microcontroller series Overview, Architecture of Microcontroller 8051 – Block diagram, Instruction set, Assembly Language Programming.

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# Electrical Engineering Syllabus for Senior Technical Assistant (Sr. TA)

1. **Fundamentals of Electrical Engineering:** Introduction to electrical elements, concepts of resistance, inductance, capacitance and their combinations, Circuit laws, Ohm's law, KCL, KVL, node and mesh analysis, resonance, ideal current and voltage sources, Source conversions Thevenin, Norton, Superposition, reciprocity and Maximum Power Transfer theorems, Simple Circuit solution using different network theorems, Star Delta transformation, DC and AC circuit Analysis, Resonance in series and parallel RLC circuits, Three phase circuits, Wiring diagrams, Estimation of costing of Electrical items, Basic Electronics circuit elements e.g. P N Junction diodes &Transistors.

2. **Electrical Measurement and Instrumentation:** Electrical and Electronic Measurements and Measuring Instruments, PMMC, moving iron, dynamometer and induction type instruments, Extension of range, measurement of voltage, current, power, energy and power factor, Bridges and potentiometers, instrument transformers, digital voltmeters and multimeters, phase, time and frequency measurement, Q-meters, Megger, AC and DC Bridges, oscilloscopes, Measurements of active and reactive power, Energy-meter, wattmeter and power factor meter, Transducers, different transducers, measurement of displacement, flow, pressure and temperature, operational amplifiers, microprocessors and microcontrollers.

3. **Electrical Power System and Protection:** Basic elements of a power system, Basic power generation concepts, schematic arrangement and choice of site for Hydro, Thermal, Nuclear power plants, comparison of these power plants, schematic arrangement of Diesel, Gas, Pumped storage schemes-Advantages and Disadvantages, renewable energy sources, basic principle of solar energy, transmission line models and performance, cable performance, insulation, corona and radio interference, different power distribution systems, power factor correction, Generator, feeder, transformer and bus-bar protection, Lightning protection, solid state relays and circuit breakers, Sub-Station Practices, Tariffs, Neutral grounding.

4. **Electrical Machines and Drives:** Basics of electrical machines and drives, Single phase transformer – equivalent circuit, phasor diagram, tests, regulation and efficiency, three phase transformer connections, parallel operation, auto-transformer, DC machines–types, windings, generator characteristics, armature reaction and commutation, starting and speed control of motors, three phase induction motors– principles, types, performance characteristics, starting and speed control, single phase induction motors, synchronous machines – performance, regulation and parallel operation of generators, motor starting, characteristics and applications, Power Electronics devices and Drives, semiconductor power diodes, transistors, thyristor and MOSFETs – static characteristics and principles of operation, phase control rectifiers, bridge converters–fully controlled and half controlled, Choppers and Inverters.

5. **System and Control Engineering:** Basics of signals and systems, LTI systems and their classifications, analog, discrete and digital signals and systems, response of LTI systems using convolution, z-transform, Fourier series and Fourier transform based analysis, concept of system and control system, basic control system components, block diagram and signal flow graph description, reduction of block diagrams, transfer function based model representation using Laplace transform, open loop and closed loop systems, Actuators, sensors, time domain analysis of control systems, stability analysis of control systems using Routh Criteria, Root Locus Analysis, Frequency Domain Analysis, Polar Plots, Bode Method, Nyquist Method, Compensators and controllers, State space analysis and state space models, solution of state space equations for state and output response, concept of controllability and observability, state space design using pole placement.