Scheme of Examination and Syllabi vide Rolling Advt. No. 34/2024 Dt. 09/01/2024, updated on 23/01/2025 & 37/2025 Dt. 19/02/2025

A. The University will conduct interviews for recruitment to the post of Internal Audit Officer.

B. For the posts of Private Secretary, Junior Engineer (Electrical), Personal Assistant, Technical Assistant (Laboratory) and Hindi Typist, the scheme of selection includes written test/skill test/Interview as applicable. As part of the written test there would be two papers. The medium of examination and interview is English. Paper- I, which is a common and compulsory paper for all the above posts, consists of 100 objective type questions and carries maximum marks of 100, with no negative marks for wrong answers. Duration of Paper- I is two hours. Paper- II will be a descriptive one in the field of specialisation with maximum marks of 100. The duration of Paper –II is three hours.

The candidates are not allowed to bring any mathematical tables, calculators, mobiles, any other digital devices and notes into the examination hall. The candidates are advised to bring HB Pencil, Eraser, Blue Ball pen etc., on their own to write the examination. The Scheme of Examination is as follows:

1. The minimum qualifying marks for Paper I and Paper II separately shall be 45% for the unreserved and EWS category and 40% for the posts reserved for OBC category and 35% for the posts reserved for SC/ST/PwBD category.

2. The answer scripts of the candidates for the descriptive test i.e., Paper- II shall be evaluated only in respect of those candidates who secure the minimum qualifying marks in Paper- I.

3. The marks allocated for the Skill Test, wherever applicable, shall be 50 and the minimum qualifying marks in the Skill Test shall be 25. Marks scored in Skill Test do not add up to determine the relative merit of the candidates.

4. Candidates will be called for interview based on combined marks secured in Paper I and Paper II.

5. The maximum marks allocated for the interview wherever applicable shall be 20% of the total of maximum marks of Paper I & II and the marks secured by the candidate in the interview shall be added to the marks scored in Paper I and Paper II or single written (descriptive test) test as the case may be, for preparation of the merit list.

6. If two or more candidates for a post secure equal marks in Combined Performance, the relative merit amongst such candidates will be decided based on their marks scored in the Exam leading to their identical Qualification or based on the higher degree possessed by the candidate, whichever is applicable.

Notwithstanding the above, the University at its discretion may hold a single written test (Descriptive Test) and Skill Test, wherever applicable, depending upon the number of candidates, job requirements (such as posts under Technical/Laboratory services, Engineering, Information and Communication Technology, Library services etc.)

The ratio of the number of vacant posts to be filled and the number of candidates to be called for interview shall not exceed 1:15. In order to comply with this requirement of maximum ratio, the University may fix higher criteria at its discretion for the candidates.

If a minimum of three eligible applicants are not available for any vacancy to appear for the written test/interview, the University may at its discretion re-advertise the post at least twice after which the University may take appropriate action with regard to the selection. This condition shall not be insisted upon in case of selection on deputation (without absorption).

In case of posts in which there is a provision for holding a common written test, all the eligible candidates, subject to the minimum 3, may be called for the written test notwithstanding the maximum prescribed ratio. However, the successful candidates in the written test may be called for an interview, wherever required in order of merit subject to a maximum ratio of 1:15.

Services of a scribe will be provided by the University to Visually Handicapped and Orthopedically Handicapped (in both hands) candidates. The discretion of the University is final in this regard. The duration of the examination for such candidates who are allowed the services of ascribe by the University will be 30 minutes more than the normal duration of time for that Paper. The skill test or interview will also be according to the ability of such candidates as decided by the University.

Syllabi for the Written Test and Skill Test wherever applicable are indicated below for each post. The selection is based on the combined merit as indicated above with due regard to reservations.

I. Syllabus for Paper - I for all posts as indicated above:

Subject	Max. Marks	Duration
General Knowledge, General English, Numerical Aptitude, General Intelligence & Reasoning and Basic Knowledge of Computers.	100	2 Hrs.

General Knowledge: Questions will be designed to test the candidate's knowledge in National & International current events/affairs, Science &Technology, Indian History & Culture, Indian & World Geography, Indian & World Economy, Indian Polity with Constitution of India & International Affairs, Scientific Research in India and functionary organizations of higher education system including research organisations & their funding in India. National Education Policy, 2020.

The candidate's interest and knowledge on the above matters will be tested to know the level of his/her every day observation and understanding.

General English: Candidate's ability to understand English language, its sentence structure, writing ability, basic comprehension, vocabulary, their correct usage etc., would be tested.

1. Vocabulary, Spellings, Antonyms and Synonyms.
2. Fill in the blanks using correct articles, verbs, prepositions etc.
3. Grammar, sentence formation, identification of errors in sentences.
4. Parts of speech, degrees of speech, direct-indirect speech, active-passive voice.
5. Idioms and phrases.
6. Comprehension of a given passage in English.

Quantitative/Numerical Aptitude: The scope of the test will be computation of whole numbers, decimals, fractions and relationships between numbers, Percentage, Ratio &

Proportion, Square roots, Averages, Interest, Profit and Loss, Discount, Partnership Business, Time and Distance, Time & Work, Graphs, Triangle and its various kinds of centres, Heights and Distances, Histogram, Frequency polygon, Bar diagram & Pie chart.

Basics of Statistics, Elements of Averages, Mean, Median and Mode, Ogives, Study of Graphs, Charts and Tables etc.

General Intelligence: It would include questions of both verbal and non-verbal type. This component may include questions on syllogism, analogies, similarities and differences, missing numbers, characters and sequences, space visualization, spatial orientation, problem solving, analysis, judgment, decision making, visual memory, discrimination, observation, relationship concepts, arithmetical reasoning and verbal and figure classification, arithmetic number series, non-verbal series.

Basic Computer Skills: Characteristics of Computers, Computer Organisation/Configuration including RAM, ROM, File and Folder Systems, Input/ Output Devices, Computer Software-Relationship between Hardware and Software (Open source and licensed), Operating System, MS Office (exposure to Word, Excel/Spread sheet, Power Point), Conversion of Word file to PDF file, Search Engines, Browsers, Internet, Mail, Servers, Computer Peripherals, Tally, ERP, ICT in Education, Technology and Society-Indian IT Act, Digital Signatures, Application of information technology in Government for E-Governance, Information Kiosks.

II. Syllabi for Paper – II (Post-wise): All the papers are descriptive with maximum marks of 100 and the duration of the examination is 3 hours.

1. PRIVATE SECRETARY:

i. The questions will be designed to test the candidate's knowledge and awareness on higher education system in India, its regulatory bodies and recent developments in the field, basic concepts and principles of Institutional Administration including Organization, Hierarchy, Statutory Bodies and Authorities and their Responsibilities, Co-ordination, Centralization and Decentralization, Delegation of Powers.

ii. General Conditions of Service; Pay and Addition to pay; Confirmation of Appointment; Dismissal, Removal and Suspension; Foreign Service; Deputation, Lien; TA Rules; LTC Rules; Leave Rules; Medical Attendance Rule &CGHS; CCS (Conduct) Rules, 1964; CCS (CCA) Rules 1965, CCS (Pension) Rules; New Pension Scheme and Code of Ethics.

iii. Office Procedure; Parliamentary Procedures; Record Management; Public Administration.

iv. Application of Information Communication Technology (ICT) and other modern technologies in the University system.

Skill Test: Stenography and Type writing.

2. JUNIOR ENGINEER (ELECTRICAL):

i. Electrical Machines:

TRANSFORMERS: Emf equation of single-phase transformer, operation of transformer on load, equivalent circuit, vector diagram, open-circuit and short-circuit tests, voltage regulation, losses and efficiency, all-day efficiency, parallel operation of single-phase transformers with equal voltage ratios. Voltage and current relations for three-phase

transformer connections. Principle of operation of auto-transformer. Cooling of power transformer, Operation of Buchhloz's relay.
D.C. GENERATORS AND MOTORS: Expression for emf equation of D.C.Generator, armature windings, armature reaction, types of generators, characteristics. Torque equation of D.C.Motor, characteristics, speed control, starters, losses and efficiency. Testing of D.C. Machines.
THREE-PHASE INDUCTION MOTORS: Constructional aspects of cage and wound rotor types of induction motors, expression for torque, torque-slip characteristics, full load torque, starting torque and maximum torque, effects of variation of rotor resistance; losses and efficiency; different starting methods; speed control methods.
SINGLE-PHASE INDUCTION MOTORS AND COMMUTATOR MOTORS: Constructional features and operation of single-phase induction motors: split phase, capacitor and shaded pole types. Principle of operation of A.C. series motor, universal motor, Schrage motor.

ii. Switchgear and Protection:
FAULTS AND SWITCHING APPARATUS: Short-circuit calculations; fuses and isolators; circuit breakers: theory of arc interruption and different types of oil circuit breakers; lightning arresters and their selection and location.

PROTECTIVE RELAYING: Basic requirements of protective relaying, primary and back-up protection; classification of electromagnetic relays and their principles of operation; time current characteristic curves; induction type over-current relay, distance relays; Merz price protection, differential protection of transformers, bus bar protection.

iii. Transmission:
LINE CONDUCTORS, LINE SUPPORTS AND SAG CALCULATIONS: Different types of line conductors, conductor sizes commonly used for different voltage levels, Types of line supports, factors influencing the selection, cross-arms; spans, conductor spacing's and ground clearances. Sag calculations and stringing charts.

TRANSMISSION LINE PARAMETERS: Determination of inductance and capacitance of round and parallel conductors in single phase and three-phase symmetrically spaced lines.

PERFORMANCE OF LINES: Choice of voltage; short, medium and long lines; calculation of sending-end voltage, regulation and efficiency for short lines; nominal and nominal-T methods; Ferranti effect; corona: critical voltages and factors affecting corona.

INSULATORS AND SUBSTATIONS: Different types of insulators: Pin type, strain type, suspension type and relative merits; voltage distribution across string of suspension insulators, string efficiency and methods of improving arcing horns. Equipment used in substations, bus-bar arrangements.
CABLE AND DISTRIBUTION SYSTEMS: Comparison between overhead lines and underground cable. Types of cables, insulation resistance; localization of cable faults. Primary and secondary distribution; Feeders and service mains; radial and ring systems of distribution.

iv. Measuring Instruments and Electric Circuits:
MEASURING INSTRUMENTS: Indicating instruments: deflecting, controlling and damping torques, pointers and scales; ammeters and voltmeters: moving coil, moving iron,

dynamometer, induction types; instrument transformers: C.T and P.T., Wattmeter and measurement of power in three phase systems by two-wattmeter method; measurement of energy: Energy meters; M.D. indicators; trivector meter.
ELECTRIC CIRCUITS: Fundamentals of alternating current quantities, sinusoidal waveform; average and effective values; J-notation for A.C quantities; polar form; single phase series and parallel circuits; impedance triangle, phase, power factor. Active and reactive components of power; series and parallel resonance. Three- phase star and delta balanced systems.

v. Utilization of electrical energy:

ELECTRIC DRIVES: Factors governing selection of motors; matching of motors with given loads; electric braking; rating of motor; types of enclosures; motors for particular drive.

ILLUMINATION: Definitions of commonly used terms and units; types of lamps; requirements of good lighting; laws of illumination; terms like: depreciation factor, utilization factor, waste light factor, luminous efficiency, specific energy consumption, space height ratio.

3. PERSONAL ASSISTANT:

i. Office Procedure & Office Management
ii. Medical Attendance Rules
iii. LTC Rules
iv. Travelling Allowance Rules
v. CCS Leave Rules
vi. CCS (CCA) Rules, 1965
vii. CCS (Conduct) Rules, 1964
viii. Joining Time Rules.
ix. Provident Fund Rules & New Pension Scheme
x. Secretarial Practice

Skill Test:

i. Dictation: 10 minutes @ 60 wpm
ii. Transcription: 40 minutes (English)/55 minutes (Hindi)
iii. Typing Speed Test: 35 wpm in English or 30 wpm in Hindi.

4. <u>TECHNICAL ASSISTANT (LABORATORY):</u>

i. General Principles, Maintenance and Operations of Basic Equipment. Handling of Tools, Chemicals, Machines and Electrical System. Lab equipments Calibration procedures and preventive maintenance. Good Lab Practices.

ii. Storage and Stock Entry of Laboratory Consumables (Chemicals, Glassware etc). Laboratory safety rules and hazardous materials. Labelling and tagging of samples, tools and instruments.

iii. Electrical circuit elements (R, L and C): Voltage and current sources. Kirchhoff current and voltage laws, analysis of simple circuits with de excitation, Superposition, the venin and Norton Theorems, Time-domain analysis of first-order RL and RC circuits, Representation of sinusoidal waveforms, peak and rms values, phasor representation, real power, reactive power, apparent. Power, power factor, Analysis of single-phase ac circuits

consisting of R, L., C. RL. RC RLC combinations (series and parallel), resonance. Three-phase balanced circuits, voltage and current relations in star and delta connections.

iv. Construction and working of a three-phase induction motor, Significance of torque-slip characteristic, loss components, efficiency and applications. Construction, working, torque- speed characteristic and applications of de machines. Construction and working of synchronous generators.

v. Forward and Reverse biased Junctions: Qualitative description of Current flow at a junction, Reverse bias, Reverse bias breakdown- Zener breakdown, avalanche breakdown. Rectifiers Optoelectronic Devices, Photodiodes. Current and Voltage in an Illuminated Junction. Solar Cells, Photo-detectors. Light Emitting Diode

vi. Bipolar Junction Transistor: Fundamentals of BJT operation, Amplification with BJTS, BJT Fabrication. The coupled Diode model (Ebers-Moll Model), Switching operation of a transistor. Cut-off, saturation, switching cycle, specifications, Drift in the base region. Base narrowing. Avalanche breakdown.

vii. Ammeters, Voltmeter and Multimeter: Introduction, DC ammeter principle only. DC voltmeter, multi-range voltmeter. Extending voltmeter ranges, Loading. Peak responding and True RMS voltmeters. (Relevant problems)

viii. Basic experiments related to Optics, Electricity and Magnetism, Thermodynamics, Mechanics and modern Physics.

ix. Bridge Circuits for Measurement of R, L & C: DC bridges: Introduction, Wheatstone's bridge, Kelvin Bridge AC bridges: Capacitance Comparison Bridge, inductance Comparison Bridge, Maxwell's bridge, Schering Bridge. (Relevant problems)

Skill Test: Applicable as per Job.

5. HINDI TYPIST:

Translate into English/Hindi words, expressions and sentences and passages.
Hindi language, literature and official language.
Correct the Sentences.

i. Translate into English (One Paragraph) Translate into Hindi (One Paragraph)
ii. Write two Model Letters.

Skill Test: Type Writing (Hindi) Typing Speed @ 30 w.p.m. and Preparation of Excel Sheet.

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