

NCL Technician Exam Pattern

Part Names	Subject Names	Maximum Questions	Maximum Marks	Time Duration
Part A	Technical Subjects	70	70	90 Minutes
Part B	General Section (General Intelligence, Mental ability, Aptitude, etc)	30	30	
Total		100 Questions	100 Marks	

NCL Technician Syllabus - Topic Wise

Mechanical

- Engineering Mechanics.
- Mechanics of Materials.
- Vibrations.
- Machine Design.
- Theory of Machines.
- Fluid Mechanics.
- Heat-Transfer.
- Engineering Materials.
- Power Engineering.
- Turbo-machinery.
- Operations Research.
- Computer Integrated Manufacturing.
- Production Planning and Control.
- Refrigeration and air-conditioning.
- Thermodynamics.
- Casting, Forming, and Joining Processes.
- Machining and Machine Tool Operations.
- I.C. Engines.
- Metrology and Inspection.
- Inventory Control etc.

Networks, Signals, and Systems

- Linear 2-port network parameters
- Continuous-time signals
- Discrete-time signals
- LTI systems
- Digital filter design techniques.
- Network solution methods
- Network theorems

Electronic Devices

- P-N junction, Zener diode, BJT, MOS capacitor, MOSFET, LED, a photodiode and solar cell
- Energy bands in intrinsic and extrinsic silicon; Carrier transport
- The integrated circuit fabrication process

Analog Circuits

- BJT and MOSFET amplifiers
- Sinusoidal oscillators
- Function generators, wave-shaping circuits, and 555 timers
- Small signal equivalent circuits of diodes, BJTs, and MOSFETs; Simple diode circuits
- Single-stage BJT, and MOSFET amplifiers
- Voltage reference circuits
- Power supplies: ripple removal and regulation.

Digital Circuits

- Data Converters
- Semiconductor memories
- The 8-bit microprocessor (8085)
- Number systems; Combinatorial circuits
- Sequential circuits

Control Systems

- Basic control system components
- Block diagram representation
- Signal flow graph
- Transient and steady-state analysis of LTI systems;
- Frequency response;
- Routh-Hurwitz and Nyquist stability criteria; Bode and root-locus plots; Lag, lead and lag-lead compensation;
- State variable model and solution of the state equation of LTI systems.

Communications

- Fundamentals of error correction, Hamming codes;
- Timing and frequency synchronization, inter-symbol interference and its mitigation
- Basics of TDMA, FDMA, and CDMA.
- Random processes
- Analog communications
- Information theory
- Digital communications

Electromagnetics

- Waveguides
- Antennas
- Basics of radar
- Light propagation in optical fibers
- Electrostatics
- Maxwell's equations
- Plane waves and properties
- Transmission lines

Fitter Trade Topics

- Safety Demonstration
- Safety equipment identification
- Use of Fire extinguisher
- Chipping, Chip slots & oils grooves
- Marking and drilling through holes
- Forge punches and screwdrivers

Machinist Trade Topics

- Concept of interchangeability, Elements of an interchangeable system
- Surface Finish and Symbols
- Cutting tools materials
- Work holding devices
- Drilling Machine
- Planning m/c-Specifications, construction & types

Turner Trade Topics

- Precision Measuring Instrument
- Taper
- Lathe operation Eccentric turning
- Square thread
- Non –Conventional machining processes

General English

- Conjunction
- Verb
- Preposition
- Reading Comprehension
- Adjective
- Synonyms, and Antonyms
- Common Errors
- Gender
- Spelling Mistake
- Spelling
- Joining Sentences
- Para Completion
- Interjection
- Parts of Speech
- Tense
- Gerunds
- Error Correction (Phrase in Bold)
- Nouns
- Adverb
- Pronoun
- Singular and Plural
- Sentence Arrangement
- Prepositions
- Idioms, and Phrase
- Sentence Improvement
- Sentence Completion
- Fill in the blanks
- Transformation
- Error Correction (Underlined Part)
- Spelling Test
- Tag Questions
- Identify the Errors
- Synonyms
- Articles
- Prepositions
- Active and Passive Voice
- Spotting Errors
- Adjectives
- Synonyms
- Sentence Pattern
- Idioms and Phrases
- Antonyms
- Passage Completion
- Homophones
- Plural Forms
- Prefix

- Suffix
- Identify the Sentences
- Substitution
- Odd Words

General Knowledge

- Science & Technology
- Indian Constitution
- Sports
- Indian Polity
- Current Events – National & International
- Awards
- Geography – India & World
- History – India
- Geography
- Environmental Issues
- People & Personalities
- Economy – India
- Famous Days & Dates
- Countries and Capitals
- Civics
- Indian History
- Indian Economy
- Indian Parliament
- Rivers, Lakes and, Seas
- General Science
- Sports
- Artists
- Inventions and Discoveries
- Literature
- Famous Places in India
- Current Affairs
- Tourism
- Famous Books & Authors
- Indian Politics
- Heritage
- Biology

General Intelligence

- Figurative Classification
- Blood Relations
- Number Ranking
- Venn diagrams
- Arithmetical Reasoning

- Classification
- Number, Ranking & Time Sequence
- Non-Verbal Series
- Figural Pattern
- Analogies
- Coding-Decoding
- Directions
- Mathematical Operations
- Arrangements
- Number Series
- Logical Venn Diagrams
- Cubes and Dice

Numerical Ability

- Data Interpretation
- H.C.F. & L.C.M
- Ages Problems
- Time & Distance
- Boats & Streams
- Number Systems
- Profit & Loss
- Simple & Compound Interest
- Mixture and Allegation
- Time & Work
- Discounts
- Percentages
- Ratio & Proportion
- Pipes & Cisterns
- Averages

Quantitative Aptitude

- Races and Games
- Numbers and Ages
- Indices and Surds
- Problems on Trains
- Ratio and Proportion
- Areas
- Time and Work Partnership
- Pipes and Cisterns
- Problems on Numbers
- Averages
- Mixtures and Allegations
- Simple Interest
- Volumes

- Time and Distance Mensuration
- Probability
- Percentages
- Permutations and Combinations
- Odd Man Out
- Profit and Loss
- Simple Equations
- Problems on L.C.M and H.C.F
- Compound Interest
- Boats and Streams
- Simplification and Approximation
- Quadratic Equations

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