Central Warehousing Corporation (CWC New Delhi) CEWACOR

Syllabus for Professional Knowledge test (wherever applicable) with weightage out of 65 Questions for Professional Knowledge Test (This is only a Broad/Indicative syllabus and it may slightly change in the examination):

Syllabus for Management Trainee (G)

A. Human Resource Management & IR (25)

i. Management of Industrial Relations & Labour Legislation
ii. Recruitment and Selection
iii. Employee Discipline
iv. Organisation Behaviour, Organizational Change and Intervention Strategies
v. Trade Unions
vi. Compensation Management& Performance Management
vii. Human Resource Development: Strategies and Systems
viii. Manpower Planning
ix. Management of Training and Development
x. Interpersonal Processes and Counselling Skills for Managers
xi. Change & Conflict Management
xii. Dispute resolution and Grievance Management

B. Marketing Management (20)

i. Marketing: Concept
ii. Marketing of Services
iii. Advertising and Brand Management
iv. Segmentation and Positioning
v. Rural and Social Marketing
vi. Promotion Management and B2B Marketing

vii. Customer Relationship Management
viii. Consumer Behaviour
ix. Marketing Research
x. Internet as a Tool of Marketing
xi. Pricing Theories

C. Supply Chain Management (20)

i. Supply Chain Management: Concept
ii. Total Quality Management
iii. Logistics Management: National and International
iv. Retail Management
v. Transportation Management
vi. Service Operations Management
vii. Business Process Reengineering
viii. Role of IT in Supply Chain Management
ix. Emerging Issues in Supply Chain Management
x. Aggregate Planning
xi. Designing Supply Chain Network
xii. Warehousing and Inventory Planning and Management
xiii. Contract Management

Syllabus for Management Trainee (Technical)

i. **Basic Agriculture (20)** – Principles of Crop Production, Crop Protection, Post-harvest care, Grain Protection, Agriculture Extension, Horticulture, Animal Husbandry, Distribution & Economic Scenario.
ii. **Biotechnology (12)** – Microbes: Beneficial & Harmful, Genetic Engineering, Biotechnological Principles, Economic Biotechnology, Pathogens & Control, Recent trends
iii. **Entomology (20)** – Basic Entomology, Economic Entomology, Beneficial & harmful Insects, IPM, Storage Entomology, Vertebrate Pests, Taxonomy
iv. **Chemistry (13)** – Physical Chemistry, Inorganic Chemistry, Organic Chemistry.

Syllabus for Accountant

a) Financial Accounting (20)

i. Accounting Standards
ii. Accounting Process and Principles
iii. Preparation of bank reconciliation statement
iv. Rectification of errors
v. Receipts and payment accounts
vi. Single entry system
vii. Amalgamation, Absorption and Reconstruction of Companies
viii. Preparation and Presentation of company final accounts
ix. Insurance Claims
x. E-Banking, RTGS, NEFT etc.

b) Cost Accounting (15)

i. Nature and functions of Cost Accounting
ii. Cost Concepts
iii. Methods of Costing
iv. Techniques of cost control and cost reduction

c) Taxation (15)

i. Income Tax: Concept and various provisions as per Act
ii. Set off and carry forward of loss
iii. Deductions from Gross Total Income
iv. Salient features/ provisions related to VAT and Service Tax.

d) Auditing (15)

i. Auditing: Concept
ii. Company Audit
iii. Audit reports and Audit Certificates
iv. Vouching
v. Internal Control
vi. Audit of Banking/ Insurance/ Non-Profit Organisation/ Charitable Societies/ Trust/ Organisations

Syllabus for Assistant Engineer (Civil)

a) Structural Engineering (18)

i. Engineering Mechanics
ii. Solid Mechanics
iii. Structural Analysis
iv. Construction Materials and Management
v. Concrete Structures
vi. Steel Structures

b) Geotechnical Engineering & Geomatics Engineering (18)

i. Soil Mechanics
ii. Foundation Engineering
iii. Principles of surveying
iv. Maps
v. Distance and angle measurement
vi. Traversing and triangulation survey
vii. Horizontal and vertical curves
viii. Basics of GIS and GPS

c) Water Resources Engineering (10)

i. Fluid Mechanics
ii. Hydraulics
iii. Hydrology
iv. Irrigation

d) Environmental Engineering (11)

i. Water and Waste Water
ii. Air Pollution
iii. Municipal Solid Wastes
iv. Noise Pollution

e) Transportation Engineering (8)

i. Transportation Infrastructure
ii. Highway Pavements
Traffic Engineering

Syllabus for Assistant Engineer (Electrical)

A. Electric Circuits (8)

i. Network graph
ii. KCL, KVL, Node and Mesh analysis
iii. Transient response of dc and ac networks
iv. Sinusoidal steady-state analysis
v. Resonance, Passive filters, Ideal current and voltage sources
vi. Thevenin's theorem, Norton's theorem, Superposition theorem, Maximum power transfer theorem
vii. Two-port networks, Three phase circuits, Power and power factor in ac circuits.

B. Electromagnetic Fields (7)

i. Coulomb's Law, Electric Field Intensity, Electric Flux Density
ii. Gauss's Law, Divergence
iii. Electric field and potential due to point, line, plane and spherical charge distributions

iv. Effect of dielectric medium
v. Capacitance of simple configurations
vi. Biot-Savart's law, Ampere's law, Curl, Faraday's law, Lorentz force
vii. Inductance, Magnetomotive force, Reluctance, Magnetic circuits
viii. Self and Mutual inductance of simple configurations.

C. Signals and Systems (7)

i. Representation of continuous and discrete-time signals
ii. Shifting and scaling operations
iii. Linear Time Invariant and Causal systems
iv. Fourier series representation of continuous periodic signals
v. Sampling theorem, Applications of Fourier Transform, Laplace Transform and z-Transform.

D. Electrical Machines (7)

i. Single phase transformer: equivalent circuit, phasor diagram, open circuit and short circuit tests, regulation and efficiency
ii. Three phase transformers: connections, parallel operation
iii. Auto-transformer, Electromechanical energy conversion principles
iv. DC machines: separately excited, series and shunt, motoring and generating mode of operation and their characteristics, starting and speed control of dc motors
v. Three phase induction motors: principle of operation, types, performance, torque-speed characteristics, no-load and blocked rotor tests, equivalent circuit, starting and speed control
vi. Operating principle of single-phase induction motors
vii. Synchronous machines: cylindrical and salient pole machines, performance, regulation and parallel operation of generators, starting of synchronous motor, characteristics
viii. Types of losses and efficiency calculations of electric machines.

E. Power Systems (8)

i. Power generation concepts, ac and dc transmission concepts
ii. Models and performance of transmission lines and cables
iii. Series and shunt compensation
iv. Electric field distribution and insulators
v. Distribution systems, Per-unit quantities, Bus admittance matrix
vi. Gauss-Seidel and Newton-Raphson load flow methods
vii. Voltage and Frequency control, Power factor correction
viii. Symmetrical components, Symmetrical and unsymmetrical fault analysis
ix. Principles of over-current, differential and distance protection
x. Circuit breakers, System stability concepts, Equal area criterion.

F. Control Systems (7)

i. Mathematical modelling and representation of systems
ii. Feedback principle, transfer function, Block diagrams and Signal flow graphs
iii. Transient and Steady-state analysis of linear time invariant systems
iv. Routh-Hurwitz and Nyquist criteria, Bode plots, Root loci
v. Stability analysis, Lag, Lead and Lead-Lag compensators
vi. P, PI and PID controllers
vii. State space model, State transition matrix.

G. Electrical and Electronic Measurements (7)

i. Bridges and Potentiometers
ii. Measurement of voltage, current, power, energy and power factor
iii. Instrument transformers, Digital voltmeters and multimeters, Phase, Time and Frequency measurement
iv. Oscilloscopes, Error analysis.

H. Analog and Digital Electronics (7)

i. Characteristics of diodes, BJT, MOSFET
ii. Simple diode circuits: clipping, clamping, rectifiers

iii. Amplifiers: Biasing, Equivalent circuit and Frequency response
iv. Oscillators and Feedback amplifiers
v. Operational amplifiers: Characteristics and applications
vi. Simple active filters, VCOs and Timers, Combinational and Sequential logic circuits, Multiplexer, Demultiplexer, Schmitt trigger, Sample and hold circuits, A/D and D/A converters
vii. 8085Microprocessor: Architecture, Programming and Interfacing.

I. Power Electronics (7)

i. Characteristics of semiconductor power devices: Diode, Thyristor, Triac, GTO, MOSFET, IGBT
ii. DC to DC conversion: Buck, Boost and Buck-Boost converters; Single and three phase configuration of uncontrolled rectifiers, Line commutated thyristor-based converters
iii. Bidirectional ac to dc voltage source converters, Issues of line current harmonics
iv. Power factor, Distortion factor of ac to dc converters, Single phase and three phase inverters, Sinusoidal pulse width modulation.

Syllabus for Hindi Translator

i. **Descriptive:** Translation of paragraph from Hindi to English and vice versa (1 each)
ii. **Objective:** Questions related to Hindi and English grammar and usage (50)

Syllabus for Junior Technical Assistant

i. **Basic Agriculture (20)** - Crop Production, Animal Husbandry, Plant Protection, Agriculture Extension, Horticulture, Agriculture Economics
ii. **Botany (15)** – Cell Biology: Tissue, Organ & Organ System, Genetics, Plant Classification, Diversity, Ecology, Life Process: Photosynthesis, Respiration, Circulation, Movement etc.
iii. **Zoology (15)** – Animal Cell & Tissue, Organ System, Heredity & Variation, Animal Classification, Micro Organisms, Insects & Rodents
iv. **Chemistry & Physics (15)** – Chemical bonding, Organic Chemistry, Inorganic Chemistry, Chemistry in daily life, Motion, Force & Energy, Electricity, Magnetism, Light & Sound, Thermodynamics, Measurement.

CWC reserves the right to modify the structure of the examination which will be intimated through its website. Other detailed information regarding the examination will be given in an Information Handout, which will be made available for the candidates to download along with the call letters from the authorised CWC website www.cewacor.nic.in.