COCHIN SHIPYARD LIMITED
A GOVERNMENT OF INDIA ENTERPRISE
A MINIRATNA SCHEDULE A COMPANY UNDER
THE MINISTRY OF PORTS, SHIPPING AND WATERWAYS

Annexure-I

DETAILED SYLLABUS OF PART A

Particulars	Syllabus - General (Part A)
General Knowledge	• Facts about India and other countries: Basic facts/Geography /Tourism/Transport systems /Personalities/Places/History/ Constitution / Economy /Writers /Literatures /Indian States & Union Territories/International Organizations. • General Science : Branches of studies/Scientific instruments and appliances/Physics / Chemistry/Biology • Sports & Games • Important Events/Movements/Leaders/Places/Years • Writers – Authors – Biography – Autobiography • Abbreviations
General English	• Spotting Errors/Vocabulary usage/Sentence Completion/ Synonyms/Antonyms /Reconstruction of sentences/One word substitution/Idioms & Phrases/Grammar /Correct usage of Articles /Prepositions/Singular and Plural
Reasoning	• Analogy /Classification /Series Completion /Coding-Decoding/ Blood Relation /Direction Sense Test/Alphabet Test/Number and Ranking/Puzzle Test/Odd Man out/General Intelligence
Quantitative Aptitude	• Number system/Fraction and Decimals/Simplification/Volume and surface areas/Square roots and Cube roots/Problems based on numbers, Speed, Time and Distance, Simple Interest/ Compound Interest/Boats and Streams/Problems on Trains/ Percentage-Interest/HCF and LCM/Average/Ratio and Proportion /Time and Work/Problems based on ages/Profit, Loss and Discount, Statistics/Permutations & Combinations/ Probability.

DETAILED SYLLABUS OF PART B

Name of Post	Syllabus - Discipline related (Part B)
For all posts	• **Organisational Skills-** Role of a supervisor – Manpower management & resource planning – Work force motivation – Grievance handling at shop floor level – Code of Conduct & Discipline - Importance of time keeping & productivity. • Basic knowledge of computer applications. • **Supervisory Duties:-** ➢ **Principles of Organization -** Principles of organization, authority, responsibility, accountability, delegation, span of control, centralization, unity of command. ➢ **Motivation -** Meaning of motivation, understanding human behaviour, factors of motivation, levels of motivation, methods of motivating people, brief on motivation theories. ➢ **Communication -** Purpose of communication, communication process, methods of communication written, oral, audio – visual, report writing, channels of communication namely formal and informal, art of giving instructions, barriers of communication, guidelines for effective. • **HSE & IMS-** Awareness on Industrial safety & PPEs – Importance of housekeeping – Knowledge of IMS – Quality Standards – 5 S – management of industrial hazardous wastes.

In addition to the above, the following topics are included for both posts.

Name of Post	Syllabus - Discipline related (Part B)
Assistant Engineer (Civil)	**Building Materials:** Stones, bricks, timber, cement properties, and structural testing. **Concrete Technology:** Testing of concrete, properties of cement, Workability tests, water-cement ratio, slump test, curing, mix design, and non- destructive testing. **Engineering Mechanics:** Statics, equilibrium, friction, centroid and centre of gravity. **Building Construction:** Foundation types, Masonry, Doors, windows, scaffolding. **Fluid Mechanics:** Fluid properties, Bernoulli's theorem, pipe losses, open channel flow, viscosity, and surface tension. **Irrigation Engineering:** Crop water duty/delta, canal design (Lacey's & Kennedy's theories) **Transportation:** Highway geometric design, super-elevation, pavements, drainage and railway track components. **Environmental Engineering:** Water purification, testing & its parameters, sewage testing parameters, BOD & COD, potable water standards, treatment of water and septic tanks & STPs **Soil Mechanics:** Index properties Void ratio, porosity, plasticity index, permeability, compaction, shear strength & bearing capacity, Ground improvement techniques, and seismic design considerations. **Surveying:** Linear/angular measurements, chain, compass, levelling, contours and Total Station. **Estimating & Costing:** Quantity calculation, rate analysis, valuation, depreciation and tender documentation.

	Theory of Structures: Stress & strain, elastic constants, shear force (SFD), bending moment (BMD) diagram, Repair, rehabilitation, and strengthening of RCC/masonry structures. **RCC Design:** Limit State Method (LSM) for beams, one-way/two-way slabs, columns, and footings, Important Clauses of IS 456 **Steel Design:** Bolted/welded connections, tension/compression members, and plate girders, type of sections and Important Clauses of IS 800 **Contract & Procurement:** Types of contracts (Item rate, EPC, Turnkey), Tendering procedures, e-tendering, bid evaluation, claims, Construction planning, sequencing, resource & site management. **Engineering Drawing:** Basics, Projections, Sectional views Safety procedures in Construction
Assistant Engineer (Mechanical)	**<u>Theoretical and application knowledge on:</u>** • Thermodynamics, Energy cycles, IC Engines, Four stroke & two stroke engines • Refrigeration & Air conditioning, Psychrometrics • Welding – types & defects, Gas flames, Soldering & Brazing • Manufacturing processes & Machine tools. • Corrosion & its prevention. • Renewable & Non- renewable energy sources • Pumps & its types