



HINDUSTAN PETROLEUM CORPORATION LIMITED

Regd. Office: 17, Jamshedji Tata Road, Mumbai - 400020.

CIN NO: L23201MH1952GOI008858

SYLLABUS FOR COMPUTER BASED TEST **CITY GAS DISTRIBUTION (PROJECTS) POSITIONS**

UNIT I: Basics and Development of City Gas Distribution

- Properties of Natural Gas; Unit conversion in NG, Calorific equivalence with other fuels like LPG/HSD
- Demand assessment of PNG Domestic, Industrial, Commercial & CNG
- Design and development of CGD: Design Basis of CGD network and its components, Network simulation, Development of P&ID/Line schematic, Detailed Engineering and Material Take-off
- Components of Gas Value Chain: Sub-Transmission pipeline, City Gate, Station (CGS); Custody transfer Metering; Odorizing unit; District Regulation Station (DRS); **Decompression Unit (DCU)**; Steel and PE Pipelines; CNG Mother/Online / **Daughter/** Daughter Booster Station; PNG infrastructure for domestic, Industrial & commercial consumers, Virtual pipeline
- Constructions Management: Procurement and management of project Inventory, Project Planning, Scheduling and Monitoring
- **Budgeting Techniques: NPV, IRR, Payback Period, CAPEX, OPEX**

UNIT II: Regulatory Framework and Standards for City Gas Distribution

- PNGRB regulations/guidelines related to PNG, CNG and City Gas/ Local Natural Gas pipelines, T4S standards, ERDMP & IMS regulations, Quality of Service regulations
- Related standards- OISD 226/OISD-179, ANSI B31.8,
- Petroleum Act, **Pollution Control Acts, Factories Act**, Gas Cylinder Rules, PESO approval process, Drawing and documentation for steel and CNG facilities.
- Statutory permissions and Land / ROU procurement from authorities

UNIT III: Construction & Project Execution

- Route survey & alignment finalization
- HDD (Horizontal Directional Drilling)
- Trenching & backfilling practices
- Welding procedures (WPS, PQR, WPQ)
- NDT (RT, UT, MPI, DPI)
- Hydrostatic & pneumatic testing
- Corrosion protection techniques
- As-built documentation
- Commissioning procedures

Unit IV: QHSE

Construction safety, Project procedures and Risk minimization, CNG Safety, PNG Safety, Resolution of Customer complaints on service, quality & quantity; Emergency Response Plan, Safety communications, Safety features such as SRV, Interlock, Creep, Active and monitor regulation, gas detection, **cathodic protection**, MP & LP network, Markers, Audit and compliances

NOTE: The syllabus/topics mentioned are indicative in nature. Candidates are expected to possess significant knowledge/proficiency pertaining to the relevant subjects and their qualifying degree.