



BHARAT PETROLEUM CORPORATION LIMITED

RECRUITMENT OF EXPERIENCED PROFESSIONALS

SYLLABUS FOR ONLINE EXAMINATION FOR SELECT PROFILES

Bharat Petroleum Corporation Limited

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SELECTION METHODOLOGY

- ✚ The selection process will be Online test followed by further screening such as Group Discussion and Personal Interview.
- ✚ There will be **NO online tests** for the post of **Project Construction Leader and Agriculturist/Biomass Supply In Charge**. The details of the further process will be communicated to the candidates, who have applied for these profiles, through email to their registered email id.
- ✚ For candidates who have applied for the *Official Language Implementation* post the test will be **OFFLINE**. Candidates are advised to bring Blue/Black Ball Point Pen for answering the questions.
- ✚ The Online tests for all posts (*except for Project Construction Leader and Agriculturist/Biomass Supply In Charge*) will be conducted on **5th August 2018**. The Offline test for candidates appearing for Official Language Implementation will also be conducted on the same date.
- ✚ Candidates appearing for the posts of *Chemical Engineers- Petrochemical, Chemical Engineer- Refinery, Project Construction Engineer- Multiple Disciplines, Inspection Engineer, Health, Safety and Environment Officer, HR Analytics, SAP HR and Quality Assurance* need to necessarily carry Scientific Calculator. List of approved Calculators:
 - Casio FX82 (ES/MS) (with or without any suffix)
 - Casio FX83 (ES/MS) (with or without any suffix)
 - Casio FX85 (ES/MS) (with or without any suffix)
 - Sharp EL531 (with or without any prefix or suffix)
 - Texas Instruments BA II Plus (with or without any suffix)
 - Texas Instruments TI-30 (with or without any suffix)
 - Hewlett Packard HP12c (with or without any suffix)

Please note that NO SCIENTIFIC CALCULATOR WILL BE PROVIDED BY BPCL at the test centres. However, a basic arithmetic calculator will be present on the computer screen which can be used for basic calculations.

- ✚ The details of venue, time and further instructions are specified in the Admit Card.
- ✚ The computer based test will be of 2 hours duration and will consist of a total of 100 Multiple Choice questions of one marks each.
- ✚ The paper will consist of 25 general aptitude questions and 75 technical questions.



- ✚ There will be a negative marking of 0.50 marks for each incorrect answer. For more details on negative marking please go through the 'Important Instructions for Test' document published on the careers page of our website.
- ✚ The General Aptitude section will contain questions from Verbal Ability, Quantitative Aptitude and Logical Reasoning.
- ✚ The broad syllabus for the technical question paper pertaining to each profile is as detailed below. **Please note that the syllabus is only indicative in nature and should not be construed as exhaustive.**

CHEMICAL ENGINEERS – PETROCHEMICALS & REFINERIES

- Petroleum Refining Engineering and Technology
- Heat Transfer
- Mass Transfer with special emphasis on Distillation , Absorption , Extraction
- Chemical Process calculation and Stoichiometry
- Equipment process design
- Refining Economics
- Questions in Crude distillation unit, Catalytic Cracking , Hydroprocessing, Delayed coking , Catalytic Reforming
- Petrochemicals – Its manufacture and uses

PROJECT CONSTRUCTION ENGINEER – MULTIPLE DISCIPLINES

- Functions of construction management.
- Classification of construction works.
- Construction stages.
- Resources in construction project.
- Construction planning.
- Construction scheduling.
- Methods of planning and scheduling.
- Bar chart or Gantt chart.
- Network planning and scheduling.
- Terms used in network planning methods.
- Critical path method (CPM)
- Programme Evaluation Review Technique (PERT)
- Study of ISO 9001 principles.



- Quality manual – Importance, contents, documentation. Importance of checklists in achieving quality. Inspection test plan, typical checklist for electrical activities, etc.
- Management information system

INSPECTION ENGINEER

- ASME Section VIII Division 1, Section IX, Section V.
- ASME B31.3.
- ASTM standards for ferrous and non-ferrous materials.
- API 510, 570, 653, 560, 610.
- Indian Boiler Regulation.
- Factories act of respective state for pressure plants and lifting tools/tackles.
- OISD standards on plant layout, inspection of pressure vessels, heat exchangers, piping and storage tanks.
- Knowledge of interpretation of radiography films.
- Inspection of in-service pressure vessels, heat exchangers, columns, furnaces and plant piping.
- Inspection and testing of safety valves.
- Fabrication and welding of pressure vessels and piping.
- NDT techniques.

HEALTH, SAFETY & ENVIRONMENT (HSE) OFFICER

- Material Chemistry
- Building planning and construction
- Fluid Mechanics
- Engineering Thermodynamics
- Heat & Mass Transfer
- Codes, Standards and Acts
- Fire hazards & fire protection
- HSE Management

HUMAN RESOURCES- LEARNING & DEVELOPMENT

- Instructional Design
- Adult Learning Theory
- Theories of Learning



- Blooms Taxonomy
- Krathwohl's Taxonomy
- Kolb's Learning Styles
- Evaluating Learning Effectiveness
- Training Need Identification
- Basics of Psychology

HUMAN RESOURCES- EMPLOYEE RELATIONS

- The Constitution of India
- Fundamentals of Industrial Law
 - Trade Union Act, 1926
 - Industrial Employment (Standing Orders) Act, 1946
 - Industrial Disputes Act, 1947
- Disciplinary Proceedings & Domestic Enquiry
- Fundamentals of Law relating to wages and monetary benefits
 - Payment of Wages Act, 1936
 - Minimum Wages Act, 1948
 - Payment of Bonus Act, 1965
 - Equal Remuneration Act, 1976
- Fundamentals of Social Security Law
 - Employees' Compensation Act, 1923
 - ESI Act, 1948
 - Employees' Provident Fund & Miscellaneous Provisions Act, 1952
 - Maternity Benefit Act, 1961
- Fundamentals of Indian Contract Law
- The Contract Labour (Regulation & Abolition) Act, 1970
- Factories Act, 1948
- Shops & Establishment Act (State Law)
- The Sexual Harassment of Women at Workplace (Prevention, Prohibition & Redressal) Act, 2013
- Latest Amendments in Labour Laws
- Latest Court Judgments

HUMAN RESOURCES- TALENT MANAGEMENT

- Introduction to Talent Management



- Talent Acquisition & Development
- Career & Succession Planning
- Competency Assessment, Mentoring & Mapping
 - Frameworks/ Instruments for Potential Assessment
 - Psychometric instruments and framework
 - Competency framework, talent review panels
 - Development Coaching
 - Compensation & Reward Management
 - Managing Performance & Potential Key Talent
- Contemporary Issues in Talent Management
 - Talent Analytics
 - Benchmarking HR and talent processes/ practices
 - Technology-talent processes
 - Integrate Talent Management processes with other HR processes
 - Talent Management Challenges
 - Financial Perspective of Talent Management

HUMAN RESOURCES- HR ANALYTICS

- Regression Analysis
- Stochastic processes
- Multivariate Analysis
- Sampling Theory
- Probability and Statistics
- Measure Theory
- Statistical Inference
- Parametric and Non-parametric Inference
- Analysis of Variance
- Time Series Analysis
- Mathematical Modelling
- Real Complex Analysis
- Matrix Theory & Linear Estimation

HUMAN RESOURCES- SAP HR

- Knowledge of key HR processes
- Core SAP HR knowledge



- Interphase of various HR tools and SAP
- Data Analytics
- System design

QUALITY ASSURANCE

- Basic concept of Chemistry
 - Concept of significant figure / units of measurement / unit conversion for reporting results,
 - Laws of chemical combination,
 - Atomic, Molecular & Equivalent mass,
 - Oxidation number,
 - Chemical stoichiometry,
 - Acid – Base titration,
 - Hypothesis
- Structure of atom
- Chemical bonding
- Solution and colligative properties
- Electrochemistry
- Co-ordination chemistry
- Viscosity of liquid
- Basics of organic chemistry

LEGAL

- Criminal Law (CRPC/IPC)
- Evidence Act
- Contract Act
- Hindu Law of Succession
- Negotiable Instruments Act
- Constitution of India
- Arbitration and Conciliation Act
- Consumer Protection Act
- Easement Act
- Civil Procedure Code
- Partnership Act
- Registration Act
- Patents



- Trade marks
- Copyrights

COMPANY SECRETARY

- Companies Act, 2013 (including all the Rules and recent Amendments)
- SEBI (Listing Obligations and Disclosure Requirements) Regulation, 2015
- Secretarial Standards 1 & 2
- Depositories Act, 1996
- Capital Markets
- National Company Law Appellate Tribunal Rules, 2016
- Economic and Labour laws
- Communication skills
- Drafting
- Management theory and practices

OFFICIAL LANGUAGE IMPLEMENTATION

- Essay Writing
- Letter Drafting
- Translation- English to Hindi and Hindi to English