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YOUR DREAMS
OUR MISSION

INTERVIEW GUIDANCE

FOR

OIL AND NATURAL GAS CORPORATION LIMITED (ONGC)

by **PrepManzil**



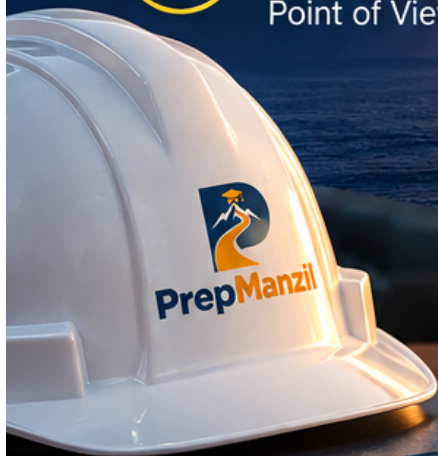
Most Trusted Book
by Students



Covers All Questions
Which is Complete
and Sufficient



Answers are According
to Interviewers
Point of View



INTERVIEW PREPARATION



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Preface

YOUR DREAMS
OUR MISSION

Your ONGC Interview Starts Here



TECHNICAL
KNOWLEDGE



CONFIDENCE



CLARITY OF
THOUGHT



COMMUNICATION
SKILLS



SAFETY
MINDSET

Clearing the written examination is a significant achievement — but for an Assistant Executive Engineer, the journey does not end there. The interview is where your technical knowledge, confidence, clarity of thought, communication skills and professional judgement come together.

Interview Guidance for Oil and Natural Gas Corporation has been designed with one simple objective: to help you face your ONGC interview with confidence and the right preparation.

At **PrepManzil**, we understand that preparing for an interview is very different from preparing for a written examination. Knowing the answer is important, but knowing how to present it, what the interviewer is actually looking for, and how to approach a question logically can make all the difference.

This book brings together the important questions a mechanical engineering aspirant can expect during an ONGC interview, covering core mechanical subjects, oil and gas field operations, safety and emergency response, maintenance and reliability, ONGC and energy sector awareness, HR and personal questions, projects and practical situations that can influence your final selection.

More importantly, the answers have been structured keeping the interviewer's perspective in mind — so that you don't merely memorize responses, but understand the thought process behind them and learn how to answer naturally and effectively.

Whether you are appearing for ONGC recruitment for the first time or preparing to improve your previous interview performance, we hope this book becomes your trusted companion in the final and most important stage of your selection journey.

Remember:

An interview is not about knowing everything.
**It is about demonstrating what you know —
with confidence, clarity and composure.**

Prepare sincerely. Think like an engineer. Answer like a professional.

Your dream of joining ONGC deserves your best preparation.

With best wishes for your success,

PrepManzil Team

YOUR DREAMS OUR MISSION

Table of Contents

<i>Preparation Roadmap.....</i>	<i>8</i>
Combined Subject-Priority List	8
Four-Week Preparation Plan	10
<i>Chapter 1 / HR, Personal Background, Resume and Career</i>	<i>11</i>
Introduction and Personal Profile.....	11
Strengths, Weaknesses and Leadership	17
Career Transitions and Posting Readiness.....	23
Personal and Behavioural Foundations	28
Motivation and Career Choices.....	49
Interview Process, Conduct and Logistics.....	53
<i>Chapter 2 / Projects, Training, Work Experience and Field Readiness.....</i>	<i>55</i>
Academic Projects.....	55
Employment and Practical Experience	60
Industrial Training and Internships	62
Project and Experience Foundations.....	65
<i>Chapter 3 / ONGC Awareness, Energy Sector and Mechanical Role</i>	<i>68</i>
Assets, Projects and Performance	68
ONGC and Energy Foundations.....	72
Upstream Value Chain and Mechanical Role.....	79
Energy Security and Transition.....	82
Company Profile and Group.....	85
<i>Chapter 4 / Fluid Mechanics, Pumps, Compressors and Piping.....</i>	<i>87</i>
Fluid-Machinery Foundations.....	87
Compressors and Gas Handling.....	88
Centrifugal and Positive-Displacement Pumps.....	90

Piping, Valves and Transients.....	100
Fluid Fundamentals.....	101
Chapter 5 / Thermodynamics, Heat Transfer, Refrigeration and Power Systems.....	109
Heat Transfer and Heat Exchangers	109
Refrigeration and Air Conditioning	114
Thermodynamic Laws and Processes	116
Thermal-Engineering Foundations.....	123
Power Plants, Turbines and Compression.....	128
Energy Efficiency and Utilities.....	130
Chapter 6 / IC Engines, Fuels, Emissions and Automobile Engineering.....	131
Engine Fundamentals and Fuels	131
Combustion, Charging and Emissions	144
Engine and Fuel Foundations.....	146
Automobile and Power-Transmission Systems	148
Chapter 7 / Strength of Materials, Engineering Mechanics and Pressure Equipment	151
Mechanics and Design Foundations.....	151
Stress, Strain and Material Behaviour	154
Design, Loading and Pressure Equipment.....	161
Chapter 8 / Machine Design, Theory of Machines, Vibrations and Tribology	165
Vibrations, Balancing and Dynamics.....	165
Machine Elements and Power Transmission.....	167
Machine-Dynamics Foundations.....	170
Tribology and Lubrication	172
Chapter 9 / Materials, Manufacturing, Welding, Corrosion and NDT.....	173
Welding, Brazing, Soldering and Inspection	173
Engineering Materials and Heat Treatment.....	179
Manufacturing and Powder Metallurgy.....	183
Materials and Fabrication Foundations	183

Chapter 10 Instrumentation, Control, Metrology, Quality and Industrial Engineering	185
Instrumentation and Control	185
Measurement and Industrial Foundations	189
Industrial and Project Engineering	192
Metrology, Drawing and Quality	193
Chapter 11 Oil and Gas Operations: Drilling, Production and Field Equipment	195
Upstream Operations Foundations	195
Drilling Rig and Well Control	195
Flow Assurance, Pipelines and Offshore	198
Production, Separation and Artificial Lift	199
Chapter 12 Maintenance, Reliability and Condition Monitoring	202
Maintenance Strategy and Criticality	202
Condition Monitoring and Root Cause	207
Maintenance and Reliability Foundations	208
Planning, Spares and Shutdowns	208
Chapter 13 Industrial Safety, Environment and Emergency Response	210
Safety and Environmental Foundations	210
Fire, Gas, H ₂ S and Emergency Response	211
Permit, Isolation and Safe Maintenance	213
Confined Space, Offshore and Process Safety	214
Environment and Emissions	216
Chapter 14 Digital Engineering, Projects and Integrated Field Scenarios	217
Digital Reliability, AI and Cybersecurity	217
Projects, Vendors and Commercial Judgement	219
Integrated Field and Ethical Scenarios	220
Integrated Engineering Judgement	222
Chapter 15 General Awareness and Communication	224

General Awareness Foundations	224
Hometown, Society and Economy	227
India and International Awareness	230
<i>Final Revision Checklist.....</i>	236
<i>Index of the 100 Most Expected Questions.....</i>	238



Mechanical Interview Guidance Manual

Unified Preparation for Mechanical Engineering Candidates

**HR • ONGC Awareness • Core Mechanical Subjects
Oil & Gas Applications • Safety • Maintenance • Troubleshooting**

2026 Edition

Company facts verified through 9 September 2026

Interview preparation guidance - not an official ONGC publication

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HOW TO USE THIS MANUAL

Preparation Roadmap

Prepare from your own profile outward: résumé and projects first, ONGC next, then high-priority mechanical systems and field scenarios.

For each answer, begin with the conclusion the panel needs, support it with one reason or engineering relation, and stop cleanly unless the panel asks for depth.

Read this correctly

Replace every bracketed HR placeholder with your own truthful, verified facts before speaking the answer.

Combined Subject-Priority List

Preparation recommendation only; no percentages or official question-frequency claims are implied.

No.	Subject	Essential topics	Priority	Why it matters for ONGC
1	Industrial and Process Safety	PTW, LOTO, isolation, gas testing, H ₂ S, fire/explosion, confined space, emergency response	Very High	Hydrocarbon operations depend on barrier integrity and disciplined safe work.
2	Pumps, Compressors and Rotating Equipment	Selection, curves, NPSH, cavitation, surge, seals, bearings, alignment, troubleshooting	Very High	Production, injection, transfer and gas handling rely on continuously available machinery.
3	Fluid Mechanics and Hydraulic Machines	Bernoulli, losses, pipe networks, dimensional reasoning, pump/turbine fundamentals, valves	Very High	Flow, pressure loss and system behaviour govern wells, pipelines and processing facilities.
4	Maintenance and Reliability	PM/PdM, RCM, RBI, vibration, lubrication, RCA, spares, shutdown planning	Very High	Availability and integrity determine safe production from dispersed and offshore assets.
5	Materials, Welding, Corrosion and NDT	Material selection, heat treatment, welding processes/defects, sour service, corrosion control, inspection	Very High	Ageing equipment, wet hydrocarbons, H ₂ S/CO ₂ and offshore exposure make integrity central.

For the same scope and period, crude-oil production was 18.355 MMT and natural-gas production was 19.533 BCM. Keep MMT, BCM and MMTOE distinct, and do not mix standalone, joint-venture, ONGC Videsh or consolidated-group figures.

Q239. Why is Mumbai High strategically important to ONGC even though it is a mature field?

Mumbai High remains important because disciplined redevelopment can recover substantial hydrocarbons from an already established offshore system.

Mature-field value comes from reservoir surveillance, infill drilling, water and gas management, artificial lift, integrity restoration and equipment reliability. The objective is profitable incremental recovery without compromising ageing-asset safety.

Q240. How does higher domestic production improve India's energy security?

Every sustainably produced domestic barrel or cubic metre reduces exposure to import disruption and foreign-price volatility.

It also supports domestic industry, government revenue, technical capability and emergency resilience. Production must still pass safety, environmental and economic tests; volume alone is not success.

Q241. Why is reserve replacement different from production growth?

Production uses today's developed reserves, whereas reserve replacement secures tomorrow's producible inventory.

Replacement may come from discoveries, appraisal, improved recovery, better reservoir understanding or commercial maturation. A company can increase short-term output yet weaken its future if it does not replace depleted reserves.

Q242. Why are recoverable hydrocarbon reserves in the oil sector declining?

[ONGC Interview]

Hydrocarbon reserves decline when production and technical/economic revisions exceed additions from discoveries, appraisal, improved recovery, and commercial reclassification.

Mature-field pressure decline and rising water cut reduce output, but “reserves” are not a fixed geological total: price, technology, recovery factor, data, and project sanction can move volumes into or out of the proved category.

Q243. What was ONGC's reported total oil-and-gas production in FY 2025-26?

[ONGC Interview]

ONGC reported standalone oil-and-oil-equivalent-gas production of 38.865 MMTOE in FY 2025–26, excluding joint ventures.

For the same scope and period, crude-oil production was 18.355 MMT and natural-gas production was 19.533 BCM. State the reporting period, unit and organisational perimeter with every production figure.

Q244. What were ONGC's oil and gas production figures in the previous reporting year? [ONGC Interview]

For FY 2024–25, ONGC reported standalone oil-and-oil-equivalent-gas production of 39.252 MMTOE, excluding joint ventures.

For the same scope and period, crude-oil production was 18.558 MMT and natural-gas production was 19.654 BCM. These physical units must not be added directly; MMTOE is the energy-equivalent total.

Q245. How can ONGC earn a high profit even when oil production declines?

[ONGC Interview]

Profit can rise even when physical production falls because realised oil/gas prices, exchange rates, subsidies/taxes, product mix, dividends and cost or impairment movements can outweigh volume decline.

Begin with the revenue bridge:

$$Revenue \approx Volume \times Realisation$$

Then account for operating cost, depreciation, finance cost, taxes and exceptional items. Never infer operational improvement from profit alone.

Centrifugal and Positive-Displacement Pumps

Q314. What is the difference between centrifugal and reciprocating pumps?

[ONGC Interview]

A centrifugal pump is a dynamic, continuous-flow machine best suited to moderate head and high flow, whereas a reciprocating pump is a positive-displacement machine suited to low flow and high head.

Centrifugal flow varies with system head and normally needs priming; reciprocating delivery is pulsating and, at fixed displacement and approximately constant volumetric efficiency, varies nearly in proportion to speed:

$$Q \propto N$$

A reciprocating pump requires relief protection. Viscosity, NPSH, solids, control range, maintenance, and total life-cycle cost decide selection.

Q315. What are the main types of pumps, and which type is suitable for a high-head application? [ONGC Interview]

Pumps are broadly positive-displacement or dynamic; high-head duty is commonly met by a reciprocating/rotary positive-displacement pump for lower flow or a multistage centrifugal pump for continuous higher flow.

Selection depends on flow, total dynamic head, viscosity, solids, NPSH margin, leakage tolerance, controllability, reliability, and life-cycle cost—not head alone.

Q316. What is cavitation, and what are its effects on a pump? [ONGC Interview]

Cavitation is the formation and collapse of vapour bubbles when local liquid pressure falls below vapour pressure.

It causes noise, vibration, pitting, and loss of head and efficiency, eventually damaging the pump. The suction system must satisfy the specified cavitation-margin condition:

$$NPSH_A > NPSH_R + \text{specified margin}$$

Reduce suction losses or temperature, increase suction pressure or submergence, and operate near the intended range.

Q317. What is powder metallurgy, what are its uses, and where are powder-metallurgy components used in pumps? [ONGC Interview]

Powder metallurgy makes components by preparing and blending metal powder, compacting it, and sintering the compact, normally below the melting point of the principal constituent.

It provides near-net shape, material efficiency, special alloy combinations and controlled porosity. In pumps it may be used for self-lubricating porous bearings or bushes, filters, wear parts and selected small components; pressure-containing or highly fatigue-loaded parts require explicit proof of density, strength, corrosion resistance and leak tightness rather than assuming that PM is suitable.

Q318. What is the effect of operating reciprocating pumps in series? [ONGC Interview]

Reciprocating pumps in series can develop a higher total pressure or head at essentially the same steady flow, provided each stage and the piping are properly rated and controlled.

Ideally, the pressure rises and corresponding heads add:

$$\Delta p_{total} = \sum_i \Delta p_i, \quad H_{total} = \sum_i H_i$$

Check pulsation, relief protection, suction conditions, interstage pressure, power, controls, and mechanical ratings; unequal displacement or poor control can overload one stage.

Q319. What is NPSH, and what is the difference between NPSH required and NPSH available? [ONGC Interview]

NPSH is the absolute suction head above the liquid's vapour-pressure head. Safe operation requires NPSH_{available} to exceed NPSH_{required} with an appropriate margin.

NPSH_A is set by the system—absolute surface pressure, static head, vapour pressure and suction losses. NPSH_R is determined by pump testing for a specified performance-drop criterion and supplied by the manufacturer.

Excessive swab can invite an influx; excessive surge can fracture a weak formation and cause losses. Trip speed, mud rheology, clearances, hole condition and pipe-end geometry govern both effects.

Q641. Distinguish a kick from a blowout.

A kick is an unintended formation-fluid influx; a blowout is an uncontrolled release after barriers fail.

Early kick indicators include pit gain, flow with pumps off and an unexpected change in return flow or pump behaviour. Prompt recognition and approved shut-in action prevent escalation.

Q642. Compare the Driller's Method and Wait-and-Weight Method.

Both methods remove an influx under controlled bottom-hole pressure, but they differ in circulation strategy.

The Driller's Method normally circulates the kick out first and then circulates kill-weight mud; Wait-and-Weight prepares kill mud before one planned circulation. Selection follows the approved programme, well geometry, pressure limits, mixing capability and crew readiness.

Q643. Why is cement integrity a primary well barrier issue?

Sound cement must provide zonal isolation and dependable structural support throughout the well life.

Poor displacement, contamination, gas migration, shrinkage or thermal cycling can create channels and sustained casing pressure. Good design requires compatible slurry, centralisation, mud removal, verified placement and post-job evaluation.

Q644. What functions must drilling fluid perform?

Drilling fluid must control formation pressure while cleaning, cooling and stabilising the well.

It transports cuttings, cools and lubricates the bit, supports the borehole, limits fluid invasion and carries hydraulic power. Density, rheology, filtration and chemistry must be controlled because an error can cause losses, kicks, stuck pipe or formation damage.

Q645. What should the driller do on confirming a kick?

The driller must stop the operation, secure the well through the approved shut-in procedure and immediately preserve accurate well data.

The crew spaces out as required, shuts in with the designated BOP sequence, records shut-in drill-pipe and casing pressures, monitors volumes and informs the responsible well-control authority. Improvised action is unacceptable because the well-kill plan depends on reliable data and clear command.

Q646. Why are both annular and ram preventers used in a BOP stack?

Annular and ram preventers provide complementary sealing capability and redundancy for different well conditions.

An annular preventer can seal around several tubular sizes and may permit limited controlled pipe movement. Pipe rams close around the specified tubular outside diameter; blind rams close only when the bore is clear; and blind-shear rams are designed to shear specified tubulars and then seal. The crew must match the barrier to the actual string position and verified pressure and shear envelope, because tool joints, casing or some high-strength tubulars may not be shearable.

Q647. How would you distinguish differential sticking from mechanical sticking?

Differential sticking typically permits circulation but prevents pipe movement against an overbalanced permeable zone.

Mechanical sticking is more often associated with pack-off, ledges, keyseats, cuttings accumulation or hole collapse and may restrict circulation. Torque, drag, pressure response, depth history and recent operations must be diagnosed before choosing a freeing method.

Q697. Why should water not be used blindly on every fire? [ESE Interview]

The extinguishing medium must match the fuel and electrical condition. Water can spread flammable-liquid fires, react with some materials or create shock risk on energised equipment; isolate energy and use the correct rated agent.

Q698. What makes an emergency drill technically valuable? [ESE Interview]

A drill tests detection, communication, evacuation, shutdown, accountability, rescue and command under realistic constraints. Its value comes from measured observations and closed corrective actions, not from merely completing the exercise.

Q699. What should an offshore worker do when the general alarm sounds?

The worker must stop safely, follow the installation alarm instruction and report promptly to the assigned muster point.

Carry required personal survival equipment, use the designated route, remain accountable and await command. Returning for belongings or acting on rumour can delay evacuation and compromise headcount.

Q700. How would you control a hydrocarbon fire risk?

The strongest strategy is to prevent loss of containment and ignition before relying on firefighting.

Maintain primary containment, detect leaks early, control ignition sources, segregate inventories, provide emergency isolation and depressurisation, and ensure suitable fixed and mobile response systems. Firewater and foam availability must be based on credible scenarios and periodically tested.

Q701. You detect a hydrocarbon leak near operating equipment. What is your first response?

My first priority is life safety: raise the alarm, avoid ignition and move to a safe location in accordance with the emergency plan.

I would notify control, establish exclusion, and support remote isolation or shutdown only within my authority. I would not approach or operate local equipment inside an uncertain vapour cloud.

Permit, Isolation and Safe Maintenance

Q702. What is positive isolation before maintenance? [ESE Interview]

Positive isolation physically prevents hazardous energy or material from reaching the worksite. Depending on the risk, it may require disconnection, blanking, double block and bleed, locking and verification of zero energy.

Q703. Why is a permit to work more than a written permission slip? [ESE Interview]

A permit is a controlled verification that hazards, isolations, competence, precautions, duration and hand-back conditions are understood. It coordinates conflicting work and creates accountability at hazardous interfaces.

Q704. Why is lockout-tagout necessary even after a machine is switched off? [ESE Interview]

The stop button does not isolate stored or unexpected energy. Lockout-tagout separates every hazardous source, secures it against re-energisation and verifies a zero-energy state before servicing begins.

Q705. What must be verified before making the first break in a hydrocarbon line?

The first break may begin only after the correct line is identified, positively isolated, depressurised, drained and verified safe under the approved work control.

The team must consider trapped pockets and re-pressurisation paths, confirm blinds or other specified isolation, complete the required purge and gas tests, control ignition sources, select chemical and pressure-rated PPE, and arrange drainage or spill containment. People should remain out of the line of fire and loosen the joint by the authorised method from the safest position. Any pressure, odour, liquid or unexpected condition is a stop-work signal requiring reassessment.

This is a free sample

You have read 16 pages of a 247-page manual.

What the complete manual contains

- **100 most-expected ONGC questions** with model answers, indexed for quick revision
- **15 chapters** covering HR, projects, ONGC awareness and every core mechanical subject
- **Oil and gas field operations** drilling, well control, production and flow assurance
- **Industrial safety and emergency response** H2S, confined space and permit-to-work
- **Maintenance and reliability** condition monitoring, criticality and shutdown planning
- **A combined subject-priority list** so you prepare in the order that matters
- **A four-week preparation plan** and a final revision checklist

Answers written the way a panel wants to hear them.

Conclusion first, one supporting reason or engineering relation, then a clean stop.
ONGC company facts are verified through September 2026.

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