

TABLE 1

Particulars	Syllabus - General (Part A)
General Knowledge	<ul style="list-style-type: none"> • 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
Quantitative Aptitude	<ul style="list-style-type: none"> • Number system • Fractions 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 age • Profit, Loss, and Discount • Statistics • Permutations & Combinations • Probability

TABLE 2

Syllabus – Trade Related (Crane Operator Diesel)

Crane Operation and Maintenance:

- Crane Components and Function: Understanding the functions of different crane components, including hoists, trolleys, and controls.
- Load Handling: Proper techniques for lifting, moving, and positioning loads using various hoisting attachments (hooks, slings, etc.).
- Load Hook-up and Safety: Determining the safety of a load and ensuring proper hook-up procedures.
- Crane Maintenance and Troubleshooting: Identifying and addressing common problems with diesel cranes, including mechanical and electrical issues.
- Electronic Diesel Control Systems: Understanding the operation of electronic diesel control systems, including Common Rail Diesel Injection (CRDI) and HEUI systems.
- Sensors and Actuators: Understanding the role of sensors and actuators in diesel engine operation.
- Pneumatic Symbols, Description and function of air Reciprocating Compressor. Function of Air service unit (FRL-Filter, Regulator & Lubricator).
- Engine Types: Familiarity with different types of diesel engines, including marine and stationary engines.
- Type of Battery & cells, Lead acid batteries & Stay Maintenance Free (SMF) batteries, and Charging Dynamo.
- Various types of Cranes (Mobile, Telescopic, Tower crane, Truck mounted)

Engines Knowledge:

- Description of internal & external combustion engines, Engine specifications. Various gauges/instruments on a dashboard of a vehicle Speedometer, Tachometer, Fuel gauge, and Indicators. Different types of starting and stopping methods of Diesel Engine
- Diesel Engine Fundamentals: Understanding the principles of operation, construction, and maintenance of diesel engines.

- Engine Systems: Familiarity with various engine systems, including fuel injection, cooling, lubrication, and starting systems.
- Basic Electrical Knowledge: Understanding basic electrical concepts and their application in diesel engines.
- Troubleshooting: Identifying and addressing common problems with diesel engines.
- Emission Standards: Understanding Indian emission standards for vehicles.
- Motor Vehicle Acts & Rules: Awareness of relevant motor vehicle acts and rules.
- Description of starter motor circuit.
- Troubleshooting : Causes and remedy for Engine Not starting – Mechanical & Electrical causes, High fuel consumption, Engine overheating, Low Power Generation, Excessive oil consumption, Low/High Engine Oil Pressure, Engine Noise.

Fasteners & Joints.

- Screw Threads – Forms of Various Screw threads used in general in the industry – Nomenclature, convention Workshop problems related to average.
- Fastening Devices – Temporary and Permanent. Meaning and difference. Temporary Device – Hexagonal Bolt, Nut, Check Nut, Washer.
- Different Methods of Preventions of rotation of Bolts - Check nut, Square headed bolt, Square headed bolt with square neck, cup headed bolt, Eye bolt, counter sunk headed bolt, rag bolt, etc. Workshop problems related to ratio and proportion.
- Different Methods of locking of nuts :- a) Lock nuts, b) Split pin, c) Slotted nut, e) Castle nut, f) Wings nut, etc.
- Permanent Fastening Devices- Rivets – different parts and their types Different types of rivet heads.

General

- Basic Rigging, rigging tools identification Check and maintenance of Crane ropes, Rope pulleys, Load hooks and end fittings, Standard safety practices while operating cranes, Preventive maintenance of cranes, Various Electrical & Mechanical Braking system in Cranes, Safety devices used in Cranes, Load measuring and indicators, Various communication methods and Hand Signals, Safety codes and standards, Awareness of Industrial Rules and Regulations.
- Safety & Precautions to be observed in the shop. Basic first aid, safety signs Periodic testing of lifting equipment

TABLE 3**Syllabus - Discipline related
(Staff Car Driver)**

- Traffic rules
- Traffic Signals
- Sign Boards on roads
- General Details regarding Vehicles
- General maintenance of vehicles
- Documents required for driving
- Insurance and tax details
- First Aid
- Etiquette and dignities to be followed by a staff car driver
- Road safety