

**SYLLABUS FOR RECRUITMENT TO THE POST OF**  
**INSPECTOR OF MOTOR VEHICLES**

**Mechanical and Automobile Engineering.**

**(Section-A is compulsory. Candidates can choose either of the Section-B OR Section-C)**

**1. Strength of Materials :**

Stress and strain, Strain energy, shearing force and bending moment, moment of inertia, Principal planes and stresses, slope and deflection. Direct and bending stresses, Columns, Torsion and thin cylinders.

**2. Mechanical Technology :**

Engineering materials, Non Chip forming processes, chip Forming process: Turning, Drilling, Boring, Broaching, Finishing and super finishing, Gear production as well as NC-CNC and non conventional machining methods.

**3. Theory of Machines :**

Kinematics and dynamics of machines, role of friction, different power devices and power transmission equipments such as governors, gyroscopes etc., Applications of cams.

**4. Hydraulics :**

Fluids and their properties, Laminar and turbulent flow, Bernaulli's Equation, Fluid pressure, Pascal's Law, Surface tension, fluid flow and its measurement.

**5. Thermal Engineering :**

Sources of energy: Conventional and non conventional, Laws of thermodynamics, Principle and working of heat engines, air compressors. Air Standard, vapour power and Gas power cycles.

**6. A. Automobile Engines :**

Theory, working and constructional features of C.I. and S.I. engines, Combustion phenomena and various ignition systems, Fuels and Lubricants, Performance and Testing of I.C.Engines, Pollution control.

**B. Auto Electrical System and Autotronics :**

Automobiles battery, Ignition System, Charging System, Current and Voltage Regulation of Alternator, PLC, Transducers, Sensores, Actuators and their applications in automobiles.

**Section B: Mechanical Engineering.****1. Hydraulic Machinery:**

Impact of jet, Hydraulic turbines, Hydraulic pumps: Centrifugal, reciprocating and other types. Hydraulic control circuits.

**2. Refrigeration and Air Conditioning :**

Refrigerator and heat pump, Vapour compression and vapour absorption refrigeration systems, Refrigerants, Psychrometry, Air conditioning and its applications.

**3. Industrial Engineering:**

Types of production, plant layouts process planning, work study, statistical quality control, Metrology.

**OR**

**Section-C: Automobile Engineering-****1. Automobile Systems:**

Vehicle layout, Transmission system, breaking systems, ABS, Steering and suspension system, Chasis Frame and Body engineering.

**2. Vehicle Maintenance:**

Performance of vehicles, engine electricals and electronics, workshop layout, repairing and servicing, Emission measurements and control techniques.

**3. Transport Management:**

Elements of transport and its operations, Motor Vehicle Act, Karnataka Motor Vehicles Taxation Act 1957 and Rules, Motor Vehicles Insurance.