

**महाराष्ट्र अराजपत्रित सेवा मुख्य परीक्षा (गट क)**  
**सहायक मोटार वाहन निरीक्षक मुख्य परीक्षा**  
**Maharashtra Non Gazetted Services Main Examination (Group C)**  
**Assistant Motor Vehicle Inspector Main Exam**

-: परीक्षा योजना :-

प्रश्नपत्रिकांची संख्या - एक

विषय व सांकेतांक	दर्जा	माध्यम	प्रश्नसंख्या	गुण	परीक्षेचा कालावधी	प्रश्नपत्रिकेचे स्वरूप
यंत्र अभियांत्रिकी व स्वयंचल अभियांत्रिकी विषयावर आधारित (सांकेतांक क्र.२४)	विहित विषयातील पदविकेसमान	इंग्रजी	१५०	३००	दीड तास	वस्तुनिष्ठ बहुपर्यायी

नकारात्मक गुणदान -

१) प्रत्येक चुकीच्या उत्तराकरीता २५% किंवा १/४ एवढे गुण एकूण गुणांमधून वजा/ कमी करण्यात येतील.
२) एखाद्या प्रश्नाची एकापेक्षा अधिक उत्तरे दिली असल्यास अथवा ज्या उमेदवाराने उत्तरपत्रिकेत पूर्ण वर्तुळ चिन्हांकित केले नसेल अशा प्रश्नाचे उत्तर चुकीचे समजण्यात येऊन त्या प्रश्नाच्या उत्तराकरीता २५% किंवा १/४ एवढे गुण एकूण गुणांमधून वजा/कमी करण्यात येतील.
३) वरीलप्रमाणे कार्यपध्दतीचा अवलंब करताना एकूण अंतिम गुणांची बेरीज अपूर्णाकात आली तरीही ती अपूर्णाकातच राहिल व पुढील कार्यवाही त्याच्या आधारे करण्यात येईल.
४) एखाद्या प्रश्नाचे उत्तर अनुत्तरितअसेल तर, अशा प्रकरणी नकारात्मक गुणांची पध्दत लागू असणार नाही.

-: अभ्यासक्रम :-

अ.क्र.	विषय
1	<b>Strength of Materials:</b> Simple stress, strain energy, shearing force and bending moment, moment of inertia, Principle planes and stresses, slope, and deflection. Direct and bending stresses, Theory of torsion, assumptions, torsional stresses, and strains.
2	<b>Manufacturing Processes:</b> Engineering materials and their properties, Metal cutting process: Turning, Drilling, Milling, Boring, Broaching, Finishing and super finishing. Plastics and their processing Metal joining processes, NC-CNC, and non-conventional machining methods.
3	<b>Theory of Machines:</b> Kinematics and dynamics of machines, role of friction, power transmission equipment such as fly wheel, clutch, belt drive and governors. Principle of gyroscopes and its effects, Applications of cams.
4	<b>Hydraulics and hydraulic machineries: -</b> Fluids and their properties, Laminar and turbulent flow, Bernoulli's Equation, Fluid Pressure, Pascal's Law, Surface tension, fluid flow and its measurement. Hydraulic turbines, Hydraulic pumps.



5	<b>Thermal Engineering and refrigeration</b> <b>Sources of energy:</b> Conventional and non-conventional, Laws of thermodynamics, Principle and working of heat engines, air compressors. Air Standard, vapors power and Gas power cycles. Refrigerator and heat pump, Vapor compression and vapor absorption refrigeration systems,
6	<b>Industrial Engineering and Management:</b> Types of Management and organization and their functions, Industrial acts, Types of production, plant layouts, process planning, work study, statistical quality control, Metrology.
7	<b>Power Developing Systems and construction:</b> chassis, layout types, Sub-systems of automobile. SI/CI -Two stroke, four stroke construction and working, types of Chassis and frames CRDI, MPFI system, Fuel pumps and fuel injector ECU for CI engine, Ignition systems used in the automobile.
8	<b>Cooling and Lubrication systems:</b> Cooling system: purpose, types of cooling system, troubles, and remedies of cooling system. lubrication systems: - Types of lubricants, multi viscosity oils, chassis lubrication. Engine lubrication: -types of lubricating systems, crankcase ventilation, Engine lubrication troubles and remedies.
9	<b>Transmission systems:</b> Construction and working of single plate, multi-plate, cone clutch, centrifugal clutch. Faults and remedies/repairs of clutches. Gear Box – Construction and working of sliding mesh, constant mesh, synchromesh, torque converter, Faults, and remedies/repairs of gear box.
10	<b>Steering Systems and starting drives:</b> Front axle, types of stub axle, steering geometry, Ackerman's mechanism. Under steer, over steer, steering linkage. Type of steering gears, Power steering wheel alignment, wheel balancing starter motor drive-Bendix drive, over running clutch drive, follow thru drive Construction and working of dynamo and alternator, specifications of alternator Cutouts, relay, and regulator.
11	<b>Differential, rear axle and brakes:</b> - Differential - function, construction, working Principle, Transfer case Types of rear axle: - semi-floating, full floating bearing, three quarter floating axle Types of brakes: - drum brakes, disk brakes. Hand Brake/ Parking Brake. hydraulic, air brakes, Brake troubleshooting, ABS.
12	<b>Vehicle maintenance and Transport Management:</b> Performance of vehicles, engine electrical and electronics, workshop layout, repairing and servicing, Emission measurements and control techniques. Elements of transport and its operations.
13	<b>Automobile Electrical and Electronic systems,</b> Battery, Starting system, Alternators, Charging, Inspection, and maintenance of electrical systems.
14	<b>Introduction to Electric Vehicles:</b> Introduction to Energy Storage Requirements in Hybrid and Electric Vehicles: - Battery based energy storage, Battery Specifications, Battery Management System.
15	<b>Motor Vehicle Act and Road Safety</b> Introduction to Vehicle Act and Road Safety, Licensing, registration, Motor Vehicle Act, Taxation, Insurance etc Organization structure of RTO Department, Passenger comfort and safety.

दिनांक - ५ डिसेंबर, २०२२

सचिव  
महाराष्ट्र लोकसेवा आयोग