

**ANNEXURE – II**  
**NOTIFICATION NO.12/2022**  
**SCHEME AND SYLLABUS FOR RECRUITMENT TO THE POST OF ASSISTANT MOTOR VEHICLE INSPECTORS**  
**IN A.P. TRANSPORT SUBORDINATE SERVICE**

**SCHEME**

<b>WRITTEN EXAMINATION (Objective Type)</b>				
		<b>Max. Marks</b>	<b>No. of Questions</b>	<b>Duration</b>
PAPER-1	General Studies and Mental Ability (Degree Standard)	150 Marks	150 Qns.	150 Minutes
PAPER-2	Subject: Automobile Engineering. (Diploma Standard)	150 Marks	150 Qns.	150 Minutes.
TOTAL		300 Marks		
<b>NEGATIVE MARKS:</b> As per G.O. Ms. No.235 Finance (HR-I, Plg & Policy) Dept., Dt.06/12/2016, for each wrong answer will be penalized with 1/3 <sup>rd</sup> of the marks prescribed for the question.				

**Syllabus**

**PAPER –I General Studies and Mental Ability**  
**(Degree Standard)**

1. Events of national and international importance.
2. Current affairs- international, national and regional.
3. General Science and its applications to the day to day life Contemporary developments in Science & Technology and information Technology
4. Social- economic and political history of modern India with emphasis on Andhra Pradesh.
5. Indian polity and governance: constitutional issues, public policy, reforms and e-governance initiatives with specific reference to Andhra Pradesh.
6. Economic development in India since independence with emphasis on Andhra Pradesh.
7. Physical geography of Indian sub-continent and Andhra Pradesh.
8. Disaster management: vulnerability profile, prevention and mitigation strategies, Application of Remote Sensing and GIS in the assessment of Disaster.
9. Sustainable Development and Environmental Protection
10. Logical reasoning, analytical ability and data interpretation.
11. Data Analysis:
  - a) Tabulation of data
  - b) Visual representation of data
  - c) Basic data analysis (Summary Statistics such as mean, median, mode, variance and coefficient of variation) and Interpretation
12. Bifurcation of Andhra Pradesh and its Administrative, Economic, Social, Cultural, Political, and Legal implications/problems.

**PAPER-II**  
**Automobile Engineering (Diploma Standard)**

1. Basic thermodynamics - Systems-Closed/Open systems, Property, cycle, Thermodynamic equilibrium - Zeroth law, First law, Second Law of thermodynamics - Pure substance - Mollier Diagram - Vapor Power cycles - Rankine cycle -
2. Air standard cycles-Otto, Diesel, Dual combustion cycle, derivation of expressions for mean effective pressure-diagram factor, efficiency, Sterling engine,
3. gears-nomenclature-simple, compound, epicyclic trains-calculations of torques.
4. Shafts- solid, hollowshafts; shear stress and angular deflection due to torque applied; bending moments — combined moment and torque.
5. Friction - inclined plane; screw and nut; screw jock; self locking.
6. Fuels - fire and flash point - calorific value - calorimeters- octane, certane numbers and its importance — stochemetic ratio.
7. Single cylinder, multi cylinder engine - pre whirl chambers - combustion/ignitiondelay - knocking, detonation.
8. Firing order; piston and piston rings; temperature profile of piston.
9. Fuel system - Carburetion, corburetors, Gasoline/petrol injection systems - diesel fuel injection systems, types-common rail injection system, Fuel tank.
10. Balancing of single cylinder engines.
11. Lubrication and cooling systems in automobile.
12. Transmission - gear box - clash type, synchromesh, automatic transmission systems.
13. propeller-shaft — universal coupling — differential - half shafts - floating,
14. clutches - single, multi-plate - bearing pressure-pressure plate - axial load - fluid clutch.
15. Brakes and brake mechanisms-mechanical, hydraulic and air brakes,
16. Steering - condition for correct steering — Ackermann steering.
17. Electrical system - delco system , circuit wiring, working of electrical equipment.
18. Exhaust gas analysis —**Pollutants** –Sources – Formation – Effects Of Pollution On Environment – Human – Transient Operational Effects On Pollution – Regulated – Unregulated Emissions – Emission Standards. **EMISSIONS IN SI ENGINE:** Chemistry Of SI Engine Combustion – HC and CO Formation In SI Engines – NO Formation In SI Engines – Smoke Emissions From SI Engines – Effect Of Operating Variables On Emission Formation. **EMISSIONS IN CI ENGINE:** Basics Of Diesel Combustion – Smoke Emission And Its Types In Diesel Engines – NOx Emission And Its Types From Diesel Engines – Particulate Emission In Diesel Engines. Odor, Sulfur And Aldehyde Emissions From Diesel Engines – Effect Of Operating Variables On Emission Formation.
19. Air conditioning of automobiles
20. Automobile wheel alignment — camber. castor — King pin inclination — toe-in, toe-out.
21. Maintenance of tyres - traffic Rules.
22. Materials- structure of the metals -imperfections-ferrous and non ferrous materials-heat treatment of steels.
23. Instrumentation- transducers- Motion, level, force and temperature transducers- Closed loop control and open loop control systems