

**SCHEME AND SYLLABUS FOR RECRUITMENT TO THE POST OF ASSISTANT MOTOR
VEHICLE INSPECTORS IN A.P. TRANSPORT SUBORDINATE SERVICE**

SCHEME

As per G.O Ms. No.201, Finance (HR-I Plg, & Policy) Dept., dated: 21.12.2017.

(To G.O Ms. No.141, Finance (HR-I Plg, & Policy) Dept., dated:01.08.2016 scheme of examination for recruitment to all non- gazetted categories not covered in annexure-IV)

WRITTEN EXAMINATION (Objective Type)				
		Max. Marks	No. of Questions	Duration
PAPER-1	General Studies and Mental Ability	150 Marks	150 Qns.	150 Minutes
PAPER-2	Concerned Subject (Automobile Engg. Diploma Standard)	150 Marks	150 Qns.	150 Minutes.
TOTAL		300Marks		
NEGATIVE MARKS: 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 1/3rd of the marks prescribed for the question.				

Syllabus

PAPER -I General Studies and Mental Ability

1. Events of national and international importance.
2. Current affairs- international, national and regional.
3. Basics of General Science and their relevance to the day to day life. Current developments in science, technology and information technology
4. History of Modern India with emphases upon Indian national movement.
5. Economic development in India since independence.
6. Logical reasoning, analytical ability and data interpretation.
7. Basic things about Disaster management (CBSE-VIII & IX Standard).
8. Geography of India with focus on A.P
9. Indian Constitution and Polity.
10. Sustainable Development and Environmental Protection

11. Bifurcation of Andhra Pradesh and its Administrative, Economic, Social, Cultural, Political, and legal implications/problems, including
 - a). Loss of capital city, challenges in building new capital and it's financial implications.
 - b). Division and rebuilding of common Institutions.
 - c). Division of employees, their relocation and nativity issues.
 - d). Effect of bifurcation on commerce and entrepreneurs.
 - e). Implications to financial resources of state government.
 - f). Task of post-bifurcation infrastructure development and opportunities for investments.
 - g). socioeconomic, cultural and demographic impact of bifurcation.
 - h). Impact of bifurcation on river water sharing and consequential issues.
 - i). AP REORGANISATION ACT, 2014 on AP and the arbitrariness of certain provisions.

PAPER-II (Concerned Subject)

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, hollow shafts; 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, cetane numbers and its importance — stoichiometric ratio.
7. Single cylinder, multi cylinder engine - pre whirl chambers- combustion/ignition delay - knocking, detonation.
8. Firing order; piston and piston rings; temperature profile of piston.
9. Fuel system - Carburetion, carburetors, 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 – NO_x 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—Kingpin 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
