

## SYLLABUS FOR ASSTT.ENGINEER(AUTOMOBILE)

### PAPER-I

- 1) Engineering Mechanics :  
Stress strain, Hook's law, elastic moduli, bending moments and shearing force diagrams for beams, simple bending and torsion of beams, spring, thinwalled cylinders, mechanical properties and material testing.
- 2) Automobile Engineering :  
Vehicle body engineering, Automobile Pollution and control, Chassis components, Automotive diesel engines, Power units and transmission.
- 3) Production Management :  
Method and time study, Motion, Economy and work space design, Operation and flow process charts, Product design and const selection of manufacturing process, Break even analysis, Site selection of equipment for job, Shop and Mass production, Duling dispatching, Routing.
- 4) Environmental Control :  
Refrigeration cycles, Refrigeration equipment, its operation and maintenance, Important refrigerant, Psychometric comfort, Colling and dehumidification.
- 5) Theory of Machines :  
Simple examples of links and mechanism, Classification of gears, standard gear tooth profiles wheel types of governors, static(s) and dynamics balancing, Simple examples of vibration of bars, Whirling of shafts.

### PAPER-II

1. Automative Fuels, Lubricants and Coolants :  
Manufacturing of fuels, lubricants and coolants, Combustion of fuels, Theory of Lubrication and cooling, Lubricating systems, Lubricants, Fuels for IC engines.
2. Heat Transfer :  
One dimensional steady, state conduction through walls and cylinders, Fins, Concepts of thermal boundary layer, Heat ex-exchangers.
3. Thermodynamics :  
Heat, work and temperature, First and Second laws of thermodynamics, Carnot Rankine, Otto and Diesel-Cycles.
4. Fluid Mechanics :  
Hydrostatics, Continuity equation, Bernoulli's theorem, Flow through pipes, Discharge measurement, Laminar and Turbulent flow, Concept of boundary layers.
5. Energy Conversion :  
Compression and spark ignition engineers, Compressors, Fans and Blowers, Hydraulic pumps and turbines, Thermal turbo machines, Boilers, Flow of steam through nozzles, Layout of power plants.