Axle : Classification, type of front axle, construction, components and their functions, types of rear axle and application.

Suspension : Principle, Types of suspension systems, Functional requirements of suspension systems, Types and Constructional features of Front Suspension and rear Suspension system, Spring types, Rubber and Air suspensions, Factors affecting design and selection; Analysis of Suspension system: Mobility, kinematic/graphical analysis, Roll centre analysis and force analysis

Steering System : Steering Layout, types of steering gears, staring linkages, steering mechanism, definitions, and significance of camber, caster king, pin inclination, toe in and toe out on turn. Measurement and adjustment of various steering system layouts, steering ratio, under steering and over steering, power assisted steering, steering geometry, wheel alignment, and diagnosis of fault.

Unit - V

Types of wheels, types of tyres, tyre construction, constituents of tyre, tyre tread pattern, tyre pressure and wear, tyre properties, tyre size, tyre maintenance.

Engine control Unit, Monitoring and Instrumentation, Safety interlocks and alarms, Lamps, Lighting and other circuits, fuel gauge, temperature gauge, wiper, speedometer and odometer. Active and Passive Safety systems, Seat belt, Air bag, ACD, Electronic Stability Control (ESC), Tire Pressure Monitoring System (TPMS), Lane Departure Warning System (LDWS), Adaptive Cruise Control (ACC), Driver Monitoring System (DMS), Blind Spot Detection (BSD) and Night Vision System (NVS).

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