

## <u>VISION</u>

"To develop technically skilled engineers with value-based education in automotive industry to face upcoming chances".

#### MISSION

- Understanding the need for regional automotive industries.
- Provide hands on skills for life long professional development.
- To create responsible students with sense of ethics & discipline.

Subject Name: Automobile System and Body Engineering (22442) Date :-

Assignment No :- 1

**Course Outcome: 405.1** 

**Topic Name :- Front Axle and Steering** 

- 1. List different types of axles and explain them.
- 2. Draw schematic diagrams of various types of stub axles.
- 3. Draw and explain steering linkage for rigid and independent suspension systems.
- 4. Draw and explain Ackerman steering gear mechanism.
- 5. Define following steering geometry parameters with diagram.
  - a. Caster
  - b. Camber
  - c. Kingpin Inclination
  - d. Toe in
  - e. Toe out
  - f. Understeering and oversteering
  - g. Turning radius
- 6. List different types of steering gearbox and explain construction and working of worm and roller type.
- 7. What is the need of Power Steering Draw and explain any one type of power steering with its advantages , also write function and requirements of steering.



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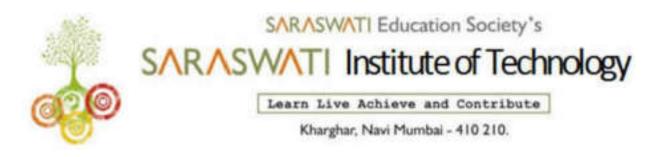
Subject Name: Automobile System and Body Engineering (22442) Date :-

Assignment No :- 2

Course Outcome: 405.2

**Topic Name :- Brakes** 

- 1. Need and classification of brakes
- 2. Construction and working of drum brakes and disk brakes
- 3. Construction and working of hydraulic and air brakes
- 4. Properties of brake fluid
- 5. Construction and working of anti-locking braking system
- 6. Explain parking brakes with diagram



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Subject Name: Automobile System and Body Engineering (22442) Date :-

Assignment No :- 3

**Course Outcome: 405.3** 

**Topic Name :- Suspension System** 

- 1. What is the necessity of suspension system in the vehicle
- 2. Give details classification of suspension systems
- 3. Explain construction and working of telescopic suspension system
- 4. Explain construction and working of air suspension with its advantages
- 5. Explain with diagram leaf spring suspension system
- 6. Comparison between independent and reject suspension system
- Explain different types of air bags/ air springs used in air suspension with diagram



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Subject Name: Automobile System and Body Engineering (22442)Date :-

Assignment No :- 4

**Course Outcome: 405.4** 

**Topic Name :- Body Engineering and Safety Devices** 

- 1. What are the functions and types of auto body
- 2. Explain anti corrosive treatment and painting given to automobile body
- 3. Explain interior trim upholstery glass and door service body insulation exterior trim
- 4. Explain airbag seat belt and central locking
- 5. Explain collapsible steering production control reverse parking
- 6. Explain different material used in automobile body



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Subject Name: Automobile System and Body Engineering (22442) Date :-

Assignment No :- 5

**Course Outcome: 405.5** 

**Topic Name :- Car Heating Ventilation and Air Conditioning System** 

- 1. Explain fundamentals of refrigeration and air conditioning and vapour compression cycle
- 2. Explain construction and working of car rating maintenance and air conditioning system.
- 3. Explain type of refrigerants
- 4. Explain desirable properties of refrigerant
- 5. Explain human comfort conditions
- 6. What is temperature control system and humidity control



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Subject Name: Automobile System and Body Engineering (22442) Date :-

Assignment No :-6

**Course Outcome: 405.6** 

**Topic Name :- Vehicle Performance** 

1) What are the resistance faced by the vehicle

2) Explain air resistance rolling resistance and gradient resistance

- 3) Define following terms
  - (a) Traction
  - (b) traction efforts
  - (c) acceleration
  - (d) pitching
  - (e) bouncing
  - (f) rolling
  - (g) sway
  - (h) yaw
- 4) Explain stability of vehicle on turns and slope