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Kharghar, Navi Mumbai - 410 210.

DEPARTMENT OF AUTOMOBILE ENGINEERING

VISION

"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

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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.

Date of Submission :-

Assign By :- Mr. Rahul Gondhali

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

Assignment No :- 2 **Course Outcome: 405.2**

Topic Name :- Brakes

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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

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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
7. 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

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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

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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

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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

Date of Submission :-

Assign By :- Mr. Rahul Gondhali