**UNIT - 1**

Q.1. Discus various type of Superchargers with the help of neat sketches?

Q.2. Explain briefly the function and advantages of a Turbocharged engine with a line diagram of Turbocharger working principle?

Q.3. Explain the car ventilation system with neat sketch?

Q.4. a) Write detail classification of automobiles?

 b) Compare the merits of front wheel drive vehicle with rear wheel drive vehicles?

Q.5. a) Write any two engines specifications?

 b) Explain the CAR body styles with examples?

Q6. Sketch a chassis of any four wheelers and mark various parts in it? Explain the functions of various components of automobiles?

**UNIT - 2**

Q.1. With the help of a neat sketch, explain the construction and operation of a sliding mesh gear box?

Q.2. Explain the working of Torque converter used in an automobile with a neat sketch?

Q.3. Describe the Hotchkiss and Torque tube drive with the help of a neat sketch?

Q.4. Explain the working of a synchromesh type of gearbox with diagram?

Q.5. Describe the working of single plate clutch used in an automobile with a neat sketch?

Q.6. Explain the necessity of a differential in an automobile? Discuss in detail the construction and operation of the differential?

**UNIT -3**

Q.1.What is the function of a steering gear? Give the classification of steering gears and explain the operation of worm and nut type steering gear with a sketch?

Q.2.What is the function of a steering linkage? Give the classification of steering linkages and explain the construction and operation of steering linkage for independent suspension type with a sketch?

Q.3. Briefly explains about Ackermann and Davis steering mechanism with line diagrams? What are their relative merits?

Q.4. Derive the equation of correct steering inclination for devise steering mechanism?

Q5. Describe in detail the rack and pinion type steering gear by means of a simple sketch and discuss its advantages?

Q6. Explain the terms: Camber, Caster, King pin inclination, Steering axis inclination and toe-in. What are the effects of each on the steering characteristics of a vehicle?

**UNIT – 4**

1. What is the need of suspension system? Describe the independent suspension system?
2. What are the requirements of good braking system? With neat sketch explain the working of hydraulic braking system in automobile?
3. What are the objectives of suspension system? Explain the constructional details of leaf spring with the help of neat sketch?
4. What are the requirements of braking system? List the types of braking system?
5. Explain the tandem master cylinder with neat sketch?

**UNIT – 5**

1. Distinguish between charging circuit and generator circuit and mention its applications?
2. Draw the circuit diagram of lighting system and discuss the working principle of it?
3. What is solenoid switch? Explain the working of solenoid switch?
4. What is the purpose of bendex drive mechanism? Explain with neat sketch?
5. Explain the following terms
6. Wiper b) Fuel gauge indicator c) Lighting system

**UNIT – 6**

1. What are the functions of a lubrication system? Explain the pressure lubricating system?
2. Explain the working principle of anti-lock braking system?
3. Explain the air bags in four wheelers with neat sketch? Why safety is required in automobile?
4. Explain any four type’s oil pumps with neat sketch?
5. Explain any three types oil filters with neat sketch?