

## **Automobile Engineering**

1. With the help of neat sketch explain the construction and working of Electromagnetic Clutch. Also list its advantages, limitations and applications.
2. What are the requirements of transmission system? With the help of neat sketch explain the construction and working of Synchromesh Gear Box.
3. Differentiate between manual and automatic transmission. With the help of neat sketch explain the working of Torque Converter.
4. Discuss in detail various safety features of latest vehicles.
5. Differentiate between Hotchkiss and Torque Tube Drive. With the help of neat sketch explain the construction and working of Hotchkiss Drive.
6. With the help of neat sketches explain Full Floating, Three quarter Floating and Semi Floating Rear Axles. Also enlist various types of load coming on Rear Axles.
7. With the help of neat sketch explain the construction and working of Single Plate Clutch. Also list its advantages, limitations and applications.
8. Discuss in detail various car body styles.
9. With the help of neat sketch explain the construction and working of Multi Plate Clutch. Also list its advantages, limitations and applications.
10. What are the different components of an automobile?
11. With the help of neat sketch explain the construction and working of Centrifugal Clutch. Also list its advantages, limitations and applications.
12. Discuss future trends in automobile.
13. With the help of neat sketch explain the construction and working of Diaphragm Spring Clutch. Also list its advantages, limitations and applications.
14. Discuss different Bus Body & Commercial vehicle body types.
15. With the help of neat sketch explain the construction and working of Overrunning Clutch. Also list its advantages, limitations and applications.
16. Explain the following:
  - Vehicle Frame
  - Separate Body and frame
17. Explain the following:
  - (a) Front Engine Front Drive Vehicles
  - (b) Four Wheel Drive Vehicles
18. Discuss different types of transfer cases in transmissions.
19. With the help of neat sketch explain the construction and working of Overdrive. Also list its advantages, limitations and applications.
20. Explain the following:
  - Transaxle
  - Free Wheel Unit
21. Discuss different types of load coming on rear axles.
22. With the help of neat sketch explain the construction and working of Constant mesh gear box. Also list its advantages, limitations and applications.
23. Explain the following:
  - General Arrangement of power transmission system
  - Classification of an automobile
24. Discuss different types of rear axles.
25. With the help of neat sketch explain the construction and working of sliding mesh gear box. Also list its advantages, limitations and applications.
26. Explain the following:
  - Drive Lines
  - Universal Joint
27. Discuss need of suspension system.
28. With the help of neat sketch explain the construction and working of epi-cyclic gear box. Also list its advantages, limitations and applications.

29. Explain the following:
  - Constant Velocity Joint
  - Clutch Linkages
30. Discuss effect of driving thrust and torque reactions.
31. With the help of neat sketch explain the construction and working of differential. Also list its advantages, limitations and applications.
32. Explain the following:
  - Front Wheel Drive
  - Double Declutching
33. Discuss different types of suspension system.
34. With the help of neat sketch explain the construction and working of Leaf Spring. Also list its advantages, limitations and applications.
35. Explain the following:
  - Suspension Spring
  - Steering Linkages and Layout
36. Discuss different factors influencing ride comfort.
37. With the help of neat sketch explain the construction and working of Telescopic type shock absorber. Also list its advantages, limitations and applications.
38. Discuss different types of steering gear boxes.
39. With the help of neat sketch explain the construction and working of Rack & Pinion Power Steering. Also list its advantages, limitations and applications.
40. Discuss different conditions for true rolling motions of wheels during steering.
41. With the help of neat sketch explain the construction and working of Electronic Steering. Also list its advantages, limitations and applications.
42. Discuss different terms associated with Front wheel Geometry & Wheel alignment.
43. With the help of neat sketch explain the construction and working of Drum Brake. Also list its advantages, limitations and applications.
44. Discuss different types of wheels and tyres.
45. With the help of neat sketch explain the construction and working of Brake actuating system. Also list its advantages, limitations and applications.
46. Explain the following:
  - Classification of Brakes
  - Tyre Rotation
47. Discuss different types of tyre & their constructional detail.
48. With the help of neat sketch explain the construction and working of Disc Brake. Also list its advantages, limitations and applications.
49. Discuss different types of tyre wear & their causes.
50. With the help of neat sketch explain the construction and working of Mechanical brake. Also list its advantages, limitations and applications.
51. Discuss different factors affecting brake performance.
52. With the help of neat sketch explain the construction and working of Pneumatic brakes. Also list its advantages, limitations and applications.
53. Explain the following:
  - Unitised Body
  - Principle of Friction Clutch
54. Discuss different types of power and power assisted brakes.
55. With the help of neat sketch explain the construction and working of PVC System. Also list its advantages, limitations and applications.
56. Discuss in detail the concept of wheel balancing.
57. With the help of neat sketch explain the construction and working of Evaporative Emission Control System. Also list its advantages, limitations and applications.
58. Explain the following:
  - Difference between shaft and axle
  - Object of the gear box
59. Discuss different sources of atmospheric pollution from the automobile.

60. With the help of neat sketch explain the construction and working of Heated Air Intake System. Also list its advantages, limitations and applications.
61. Discuss purpose and operation of charging system.
62. With the help of neat sketch explain the construction and working of ECR System. Also list its advantages, limitations and applications.
63. Discuss purpose and operation of charging systems.
64. Explain the following:
  - Requirement of Clutches
  - Front Engine Rear Drive
65. With the help of neat sketch explain the construction and working of Catalytic Converter. Also list its advantages, limitations and applications.
66. Discuss different types of air injection systems.
67. With the help of neat sketch explain the construction and working of Lead Acid Battery. Also list its advantages, limitations and applications.
68. Explain the following:
  - Capacity Rating & Maintenance of Batteries
  - Vehicle Lighting System
69. Discuss in detail the various front independent suspension systems used in an automobile.
70. Explain the following:
  - (a) Slip Joint
  - (b) Wet type and dry type of friction clutches