

**6TH SEM./MECH./ DIP IN MECH./MECH.(MAIN.)/MECH(PROD.)
/MECH(SAND.)/ MECH(IND.INT.)/2024(S)**

Th-2 Automobile Engineering & Hybrid Vehicles

Full Marks: 80

Time- 3 Hrs

**Answer Any FIVE Questions Including Q No.1& 2
Figures in the right-hand margin indicates marks**

1. Answer All Questions 2 x 10
- a. Name different types of braking systems in automobile.
 - b. Why clutch is needed in an Automobile System? Name the types of clutches.
 - c. Name the common ignition problems.
 - d. What is air assisted hydraulic brake?
 - e. Define air-fuel ratio.
 - f. What are the operational advantages of Electric Vehicles?
 - g. What is independent suspension system used in cars?
 - h. Define Carburetion process.
 - i. What do you understand by Hybrid vehicles?
 - j. State the Functions of lubrication.
2. Answer Any Six Questions 6 x 5
- a. How an Air braking system works in an automobile? Explain it.
 - b. State the advantages and disadvantages of air-cooling system.
 - c. What is the purpose of lubrication in an automobile?
 - d. Describe Multipoint fuel injection system for Petrol Engine.
 - e. Draw the layout of automobile chassis (both plan & elevation).
 - f. Explain the construction of four-speed gearbox.
 - g. Discuss about solar powered vehicles.
3. What do you mean by ignition in an automobile? Describe the Battery 10
ignition system.
4. Describe the operational advantages, present performance and applications 10
of Electric Vehicles.
5. Describe defects of cooling and their remedial measures. 10
6. What is the necessity of gearbox in an automobile? Discuss about the 10
different parts of gearbox.
7. Discuss briefly the working principle of fuel injection system for Diesel 10
Engine with sketch.

**6th Sem./MECH. /MECH(PROD)/ MECH(MAINT.) / DME
/MECH.(IND.INT)/ MECH(SAND.)/2022(S)**

Th-2 AUTOMOBILE ENGINEERING & HYBRID VEHICLES

Full Marks: 80

Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
- a. What is Air Fuel ratio?
 - b. What is the need of a Differential?
 - c. Define Automobile.
 - d. What is the function of a Spark Plug?
 - e. What is an Electric Vehicle? Give two examples.
 - f. Which types of batteries are used in an Electric Vehicle?
 - g. Name various types of Fuel cells.
 - h. What is the need of braking system in automobile?
 - i. How ignition takes place in petrol engine?
 - j. What do you mean by Carburetion process?
2. Answer **Any Six** Questions 6 x 5
- a. Write down the advantages of Hydraulic Brake.
 - b. State the layout of Automobile chassis with major components.
 - c. Differentiate between Sliding mesh and Synchromesh gear box.
 - d. Differentiate between Hybrid Vehicle and Electric Vehicle.
 - e. Explain the common ignition troubles and its remedies.
 - f. With a help of neat sketch, show the pump circulation system of water cooling.
 - g. What are components of Transmission system? Explain in brief.
3. Describe the lubrication system of I.C engine. 10
4. Describe the working principle of Fuel Feed Pump with neat sketch. 10
5. Describe the working of Single Plate Clutch with neat sketch. 10
6. Describe constructional features and working of a Telescopic Shock Absorber. 10
7. Describe the working principle of fuel injection system for multi cylinder (In-line) engine. 10