

**6<sup>TH</sup> SEM / MECH/DIP.IN MECH/MECH(MAINT)/ MECH(PROD)/  
MECH(SAND)/MECH.(IND.INT)/ 2023(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. Define automobile.
  - b. What are the advantages of Battery Ignition System?
  - c. Classify automobile.
  - d. What is the purpose of shock absorber?
  - e. Define air-fuel ratio.
  - f. Name the different Types of Brake System in Automobile.
  - g. What are the Types of Engine Cooling Systems?
  - h. Define hybrid vehicle.
  - i. What is a drive train?
  - j. Why Choke Valve is used?
2. Answer **Any Six** Questions 6 x 5
  - a. How a hydraulic braking system works in an automobile? Explain it.
  - b. State the advantages and disadvantages of aircooling system.
  - c. What is the purpose of spark plug in an automobile?
  - d. Discuss about the basic working principle of diesel fuel filter.
  - e. Draw the layout of automobile chassis (both front & top view).
  - f. Explain the working of four-speed gearbox.
  - g. Discuss about hybrid vehicles.
3. Describe the operational advantages, present performance and applications of Electric Vehicles 10
4. What is the necessity of gearbox in an automobile? Discuss about the different parts of gearbox. 10
5. Describe the lubrication System of I.C. engine. 10
6. Describe the Battery ignition system in an automobile. 10
7. Discuss briefly the working principle of fuel injection system for multi cylinder Engine with sketch. 10