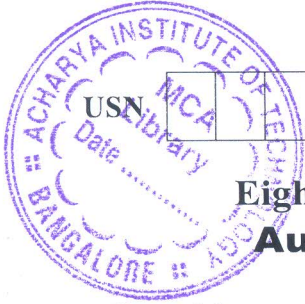


# CBCS SCHEME

18MT81



## Eighth Semester B.E. Degree Examination, June/July 2023 Automotive Electronics and Hybrid Vehicles

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

- 1 a. Define Drive train, with a neat sketch torque converter. (10 Marks)  
b. Briefly explain the major components of IC engine. (10 Marks)

OR

- 2 a. With a neat sketch, explain the working of four stroke spark ignition engine. (10 Marks)  
b. Explain with a neat sketch working of spark plug with high voltage circuit. (10 Marks)

### Module-2

- 3 a. Define Actuator. Explain metering actuators. (10 Marks)  
b. What is Hall effect? Explain the working of position sensor using Hall Effect. (10 Marks)

OR

- 4 a. With a neat sketch, explain EGR system. (10 Marks)  
b. Briefly explain Manifold Absolute pressure sensor with a neat diagram. (10 Marks)

### Module-3

- 5 a. With a control segment configuration, explain the GPS structure. (10 Marks)  
b. With a neat sketch, explain measurement of speed and oil pressure. (10 Marks)

OR

- 6 a. Explain communication system used in Automobiles. (10 Marks)  
b. Briefly explain multirate sampling. (10 Marks)

### Module-4

- 7 a. Briefly explain onboard diagnostics and off-board diagnostics. (10 Marks)  
b. With a neat sketch, explain Antilock Breaking Systems (ABS). (10 Marks)

OR

- 8 a. With a neat sketch, explain electronic suspension system. (10 Marks)  
b. Briefly explain the collision avoidance Radar Warning system. (10 Marks)

### Module-5

- 9 a. Briefly explain various components of Electric Hybrid Vehicles. (10 Marks)  
b. Briefly explain series and parallel Hybrid vehicles. (10 Marks)

OR

- 10 a. Explain the working of lead acid battery in Electric vehicles. (10 Marks)  
b. Write the history of electric vehicle and hybrid electrical vehicle. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8=50, will be treated as malpractice.