



# CBCS SCHEME

15MT81

## Eighth Semester B.E. Degree Examination, June/July 2019 Automotive Electronics and Hybride Vehicle

Time: 3 hrs.

Max. Marks: 80

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

### Module-1

- 1 a. With a neat sketch explain working of four stroke spark ignition Engine (SI). (08 Marks)  
b. Explain with a neat sketch working of spark plug with high voltage circuit. (08 Marks)

OR

- 2 a. What are drive trains? Explain planetary Gear system. (08 Marks)  
b. Write the short note on the following :  
i) Air/fuel system  
ii) Starting system  
iii) Steering system  
iv) Ignition Timing. (08 Marks)

### Module-2

- 3 a. What is Hall effect? Explain working of position sensor using Hall effect. (08 Marks)  
b. Write the short note on following sensors  
i) Exhaust oxygen sensors ii) Knock sensor. (08 Marks)

OR

- 4 a. With a neat sketch, explain EGR system [Exhaust Gas Recirculation]. (08 Marks)  
b. Define Actuator. Explain fuel metering actuators. (08 Marks)

### Module-3

- 5 a. How to measure speed, fuel, pressure and its signal conversions. (10 Marks)  
b. Briefly explain multirate sampling. (06 Marks)

OR

- 6 a. With a control segment configuration, explain GPS system structure. (10 Marks)  
b. Briefly explain Remote keyless Entry. (06 Marks)

### Module-4

- 7 a. With a digital crane control configuration, explain crane control electronics. (08 Marks)  
b. With a neat sketch, explain ABS system. (08 Marks)

OR

- 8 a. Write a short note on :  
i) Onboard diagnostics ii) Off – board diagnostics. (10 Marks)  
b. Write note on collision avoidance Radar warning system. (06 Marks)

### Module-5

- 9 a. Write the history of electrical vehicle and hybride electrical vehicle. (10 Marks)  
b. Explain briefly Electric Hybride vehicle components. (06 Marks)

OR

- 10 a. With a neat sketch, explain series Hybrid and parallel hybrid configuration of Hybride electrical vehicles. (12 Marks)  
b. Describe vehicle simulation. (04 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.