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B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

September / October 2023 Supplementary Examinations

Programme: B.E.

Branch: Electronics and Communication Engineering

Course Code: 16EC8IE2AE

Course: Automotive Electronics

Semester: VIII

Duration: 3 hrs.

Max Marks: 100

Date: 13.09.2023

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

UNIT - I

1 a) Discuss the Four Strokes of a Typical Modern Gasoline-Fueled, Spark-Ignition Engine With neat Diagrams and also Draw Power Pulses from a 4- Cylinder Engine **10**

b) List the different parts of a conventional ignition system of an SI Engine along with their functional Importance **10**

UNIT - II

2 a) Draw the transfer characteristic of a diode. With the help of this Characteristic and a circuit diagram explain the working of a half wave rectifier. **10**

b) Derive the expression for an output voltage of a summing amplifier **5**

c) Compare and Contrast the use of Analog computers verses Digital computers **5**

UNIT - III

3 a) Define A) Power B) Torque C) BSFC D) Thermal Efficiency **10**

b) Discuss the characteristics that exhibit the influence of Spark Timing and Air/Fuel Ratio on the Engine Performance **10**

UNIT - IV

4 a) Explain briefly the working of Air Flow Rate Sensor **10**

b) Explain briefly the working of Optical Crankshaft Position Sensor **10**

OR

5 a) Explain briefly the working of HALL effect Sensor. **10**

b) What is an actuator, Explain fuel Injector Actuator **10**

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

UNIT - V

6 a) Why ABS is needed, Describe the physical configuration of ABS. **10**
b) Describe Typical Cruise Control System. **10**

OR

7 Write short notes i) Alternative fuel engines **5**
ii) Radio Navigation **5**
iii) Low tire pressure warning system **5**
iv) Collision Avoidance Radar Warning System **5**
