

B.Tech III Year II Semester (R13) Regular & Supplementary Examinations May/June 2017

AUTOMOTIVE ELECTRONICS

(Electronics & Instrumentation Engineering)

Time: 3 hours

Max. Marks: 70

PART - A

(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) Write short notes on thermistors.
 - (b) What are inductive sensors?
 - (c) Mention the types of ignition system.
 - (d) Draw the block diagram of ignition and fuel control system.
 - (e) Write about automatic transmission control.
 - (f) What is anti lock braking system?
 - (g) What are the three electric power steering techniques?
 - (h) Write the fundamentals of electronically controlled power steering.
 - (i) Draw the block diagram of air bag circuit.
 - (j) Explain the operation of seat belt and air bag.

PART - B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT - I

- 2 Write different application areas of electronics in automobiles.

OR

- 3 What is the need for electronics in automobiles? Explain different challenges in the automotive industry.

UNIT - II

- 4 Explain fuel monitoring using closed loop lambda control.

OR

- 5 Explain the combustion process of spark ignition engine.

UNIT - III

- 6 With necessary block diagram, explain the antilock brake system control.

OR

- 7 Explain electronic stability control in detail.

UNIT - IV

- 8 Explain electronically controlled hydraulic system.

OR

- 9 With a neat block diagram, explain the electronic power steering system.

UNIT - V

- 10 Write about air bag and seat belt pretensioner system.

OR

- 11 (a) Explain tire pressure monitoring system in detail.
(b) Explain the types of hybrid drives