Code: 13A10605 **R13**

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)

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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

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