

Total No. of Questions : 12]

SEAT No. :

P776

[Total No. of Pages : 3

[4659] - 126

B.E. (Electronics) (Semester - II)

B : AUTOMOTIVE ELECTRONIC SYSTEMS

(2008 Pattern) (Elective - IV)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) *Answer to the two sections should be written in separate books.*
- 2) *Neat diagram must be drawn whenever necessary.*
- 3) *Figure to the right indicate full marks.*
- 4) *Answer suitable data, if necessary.*

SECTION - I

- Q1)** a) Explain different basic systems in automotives. [10]
b) With neat diagram explain four strokes of gasoline engine in automotive. [8]

OR

- Q2)** a) Draw neat schematic of ignition system and explain in detail. [10]
b) Explain basic transmission system of automotive. [8]

- Q3)** a) Write short notes on any two sensors : [8]
i) speed sensors
ii) Temperature sensors
iii) Throttle position sensor
b) Draw diagram of any two Actuators. Discuss their Characteristics and limitations. [8]

OR

- Q4)** a) Explain instrumentation amplifier using opamp. [8]
b) Explain any two circuits: [8]
i) Level shifting circuit
ii) Comparators
iii) Wave shaping circuit

P.T.O.

- Q5)** a) Explain Analog and Digital control methods. With neat block schematic explain cruise control system in automobiles. [8]
b) Draw block schematic of antilock braking system in automobiles. Explain its need in automobiles. [8]

OR

- Q6)** a) Explain 4ws electronic steering control system. [8]
b) Write short notes on any two : [8]
i) Lighting system in automobiles
ii) Air conditioning/Heating system
iii) Anti theft system

SECTION - II

- Q7)** a) What are the selection criteria for microcontroller in microcontroller based systems used in automobiles. [8]
b) Design a wiper control system using PIC microcontroller. Draw block diagram and explain the system in detail. [10]

OR

- Q8)** a) Explain Software development strategies, Compiling and linking. [10]
b) Explain Software testing and debugging technique. [8]

- Q9)** a) Explain any two buses of following : [8]
i) CAN
ii) LIN
iii) OBD-II
b) Explain GPS system in automotive environment with example. [8]

OR

- Q10)** a) Compare different series of ARM controllers and their application in automotive field. [8]
b) Compare any two : [8]
i) TTP/C and Flexray
ii) CAN and LIN
iii) OBD-I and OBD-II

- Q11)** a) Explain basic wiring system and Multiplex wiring system. [8]
b) Explain diagnostic procedure and sequence in automotives. [8]

OR

- Q12)** a) Write short note on any two : [8]
i) Passenger comfort and security systems
ii) SAE and IEEE Standards
iii) On board and off board diagnostics in Automotive.
b) What is electromagnetic compatibility? Explain EMC standards in Automotive applications. [8]

