Total No. of Questions : 12]

SEAT No. :

P1412

[Total No. of Pages : 3

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B.E. (Electronics)

AUTOMOTIVE ELECTRONIC SYSTEMS

(2008 Course) (Semester - II) (Elective -IV) (404210)

Time : 3 Hours] *[Max. Marks :100*

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Use of logarithmic tables slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.***
4) ***Assume suitable data, if necessary.***

SECTION - I

Q1) a) Explain following automotive system components **[10]**

i) Suspension

ii) Safety

iii) Brakes

iv) Steering

b) Explain 4-stroke operation of SI Engine. **[8]**

OR

Q2) a) What do you mean by ignition? Explain ignition system in brief. **[8]**

b) Explain basic transmission system & its types. **[10]**

P.T.O.

Q3) a) Explain following systems with sensors used in **[8]**

i) Speedometer

ii) Airbag system

b) Explain working & any one use of following circuits in automotive **[8]**

i) Comparator

ii) Instrumentation amplifier

OR

Q4) a) Explain fuel injection system in detail. **[8]**

b) Explain coolent temperature sensing system in detail. **[8]**

Q5) a) What is objective of Electronic Engine Control? With block diagram, explain the same. **[8]**

b) Explain following system in brief **[8]**

i) Wiper control

ii) Remote keyless entry

OR

Q6) a) Explain role of PID control in cruise control system. **[8]**

b) Explain in detail antilock braking system. **[8]**

SECTION - II

Q7) a) Enlist the requirement of processing units to be used in automotive. **[8]**

b) Explain any one software testing & debugging technique used in embedded development. **[8]**

OR

Q8) a) Explain any one application in automotive that uses PWM technique for motor control. **[8]**

b) What is role of watch dog timer? Explain usages of watch dog timer in automotive. **[8]**

Q9) a) What is CAN protocol? Explain suitability of it for data communication in automotive. **[8]**

b) Explain on board & off board diagnostics. **[8]**

OR

Q10)a) Explain role of GPS in automotive. **[8]**

b) Compare time triggered & event triggered communication protocol. **[8]**

Q11)a) Explain passanger comfort system in automotive. **[8]**

b) Explain in detail wireless communication standards used in automotive. **[10]**

OR

Q12)Write short note on (Any three): **[18]**

a) ARM cortex suitability in automotive.

b) Automotive EMC standards.

c) MOST protocol.

d) Flex ray protocol.

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