Total No. of Questions : 12]

SEAT No. :

P1878

[Total No. of Pages : 2

[5059]-189
B.E. (E&TC)
AUTOMOTIVE ELECTRONICS
(2008 Pattern)

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

Instructions to the candidates:

1) ***Answer three questions from Section I and three questions from Section - II.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Assume Suitable data if necessary.***

SECTION - I

Q1) a) Explain four stroke engine operation on the basis of following action. **[9]**
- i) Intake
- ii) Compression
- iii) Power
- iv) Exhaust

b) What are functions of battery under following conditions. **[9]**
- i) Engine OFF
- ii) Engine ON
- iii) Engine running

OR

Q2) a) Explain working principle of Hybrid vehicles. **[9]**

b) What is the role of spark plug, H.T. Coil and distributor in ignition system? **[9]**

Q3) a) Explain any position sensor used in Automotive. **[8]**

b) How flow sensing & measurement is carried out in fuel injection system **[8]**

OR

Q4) a) Explain Hall effect sensor with any one application in Automotive. **[8]**

b) Write a short note on: (any two) **[8]**
- i) Airbags
- ii) Instrumentation amplifier
- iii) Tyre pressure monitoring system

P.T.O.

Q5) a) Explain with suitable diagram anti lock braking system. **[8]**

b) Explain the working principle of power steering system. **[8]**

OR

Q6) a) Explain strategies of engine management and control. **[8]**

b) Explain cruise control system. **[8]**

SECTION - II

Q7) a) Explain algorithm for timer as a counter with interfacing diagram. **[8]**

b) Explain 8-bit PIC architecture in brief. **[8]**

OR

Q8) a) Explain any two methods to control interrupt latency. **[8]**

b) Explain features of processor that qualify it to use in automotive. **[8]**

Q9) a) Explain suitability of MOST protocol in automotive. **[8]**

b) Explain CAN & flexray communication protocol w.r.t. **[8]**

i) Use

ii) Speed

iii) Structure

iv) Advantage

OR

Q10)a) Compare the features of ARM9, ARM11 & ARM cortex. **[8]**

b) Explain use of GPRS and GPS in automotive with an example. **[8]**

Q11)a) Explain on – board and off – board diagnosis systems in automotive. **[9]**

b) Write diagnostic procedures and sequence in automotive context. **[9]**

OR

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

a) Passenger safety and comfort system

b) Automotive EMC standards

c) SAE standards in automotive

d) Self diagnostic system