

Total No. of Questions : 12]

SEAT No. :

**P845****[4659]-104**

[Total No. of Pages : 3

**B.E. (Electronics & Telecommunications)**  
**b - AUTOMOTIVE ELECTRONICS**  
**(2008 Pattern) (Elective-IV) (Semester - II)**

*Time : 3Hours]**[Max. Marks :100**Instructions to the candidates:*

- 1) *Answer three questions from Section - I and three questions from Section - II.*
- 2) *Attempt not more than six questions of which at least three questions must be from each section.*
- 3) *Answers to the two sections should be written in separate books.*
- 4) *Neat diagrams must be drawn wherever necessary.*
- 5) *Assume suitable data, if necessary.*

**SECTION-I**

- Q1)** a) Compare and contrast S.I. and D.I. engine. **[8]**
- b) Explain with the help of neat diagram. **[10]**
- i) Drive train
  - ii) Suspension system

OR

- Q2)** a) Explain Ignition system for S.I. engine. **[8]**
- b) Write short note on following: **[10]**
- i) Battery charging / Technology.
  - ii) D.C. series motor.
- Q3)** a) Explain principle of hall effect sensor with any application in automotive. **[8]**
- b) Explain working principle required for sensing following parameters:**[8]**
- i) Manifold absolute pressure (MAP).
  - ii) Torque sensing.

OR

***P.T.O.***

- Q4)** a) Explain working principle and use of solenoid in automotive. [8]  
b) With the help of block diagram explain engine control management. [8]
- Q5)** a) Explain significance of PID control in cruise control system. [8]  
b) With the help of block diagram explain engine management system. [8]

OR

- Q6)** a) Why after braking steerability is possible in ABS. [8]  
b) Explain Electronic control in spark ignition system. [8]

**SECTION-II**

- Q7)** a) Explain selection criteria for using controller in automotive system. [8]  
b) Explain Interrupt structure of 8-bit PIC microcontroller. [6]  
c) Explain any one use of timer / counter in automotive. [4]

OR

- Q8)** a) With the help of one example explain significance and role of DSP processor in automotive. [10]  
b) Write a C|8 program to toggle only the PORT B.4 bit continuously for every 50 ms. Use timer 0, 16 bit mode, the 1:4 prescaler to create the delay. Assume XTAL = 10MHz. [8]
- Q9)** a) Explain requirement of MOST protocol in automotive with the help of any two applications. [8]  
b) Explain an applications of GPS & GPRS in automotive. [8]

OR

**Q10)a)** Why CAN is called Real time protocol? Explain any one usage in automotive. [8]

b) Explain general structure of ECU in automotive. [8]

**Q11)a)** Explain on - Board diagnostics in automotive. [8]

b) Explain passenger safety norms in automotive. [8]

OR

**Q12)a)** Explain emission control standard. [8]

b) What are preliminary checks & adjustments in diagnostics? [8]



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