



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/M.Tech (AUE)/SEM-1/MAE-104/2012-13**

**2012**

**ADVANCED AUTOMOTIVE ELECTRONICS**

*Time Allotted : 3 Hours*

*Full Marks : 70*

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

*Answer Question No. 1 and any four from the rest.*

1. Answer any *seven* questions of the following :  $7 \times 2 = 14$

- a) What do you mean by feed back ?
- b) What do you mean by closed loop control ?
- c) What do you mean by DAS ?
- d) What do you mean by transducer ?
- e) What do you mean by Inverse Transducer ?
- f) What do you mean by Knock sensor ?
- g) What do you mean by Speed sensor ?
- h) What do you mean by central locking ?
- i) What do you mean by sun visor ?
- j) What do you mean by ABS ?
- k) What do you mean by MPFI ?



Answer any *four* of the following :

2. What are the advantages of Electrical transducer ? How the transducers are classified explain with example. Draw the block diagram of a DAS and explain its operation. 4 + 5 + 5
  3. How many types of feedback are there ? What do you mean by loop gain ? Find out the feedback gain with the help of a suitable block diagram. What are the advantages of feed back ? 2 + 2 + 6 + 4
  4. Write short note on any *two* : 2 × 7 = 14
    - a) Oxygen Sensor.
    - b) Objectives of DAS.
    - c) Flashing indicator.
  5. How many types of fuel injection systems are there ? Draw the control layout of the petrol injection system and explain its operation. 7 + 7
  6. Draw the operational diagram of electronic ignition system and explain its operation. Draw the pulse generator circuit and explain its operation. What are the advantages of electronic control ignition advance ? 5 + 5 + 4
  7. Draw the circuit diagram of an Electric horn and explain its operation. Draw the operational diagram of a trafficator and explain its operation. Explain the operation of oil pressure warning light. 5 + 5 + 4
  8. Draw the simple operational diagram of windscreen wiper and explain its operation. What do you mean by traction control system ? Explain the operation of ABS ? 6 + 4 + 4
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