

Total No. of Questions : 12]

SEAT No. :

P883

[Total No. of Pages :3

[4659] - 342

B.E. (Instrumentation & Control)

D : AUTOMOBILE INSTRUMENTATION

(Semester - I) (2008 Course) (Elective - II)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) *Attempt any 3 questions from each section.*
- 2) *Answers to the two sections should be written in separate answer books.*
- 3) *Neat diagrams must be drawn wherever necessary.*
- 4) *Figures to the right indicate full marks.*
- 5) *Your answers will be valued as a whole.*
- 6) *Use of logarithmic tables slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.*

SECTION - I

- Q1)** a) Explain the role of electronics in automobile. [6]
b) How the petrol/diesel engine works? [10]

OR

- Q2)** a) What are the current trends in automobile? [6]
b) Explain engine management system in automobile? [10]

- Q3)** a) How does the electronic ignition system works? [10]
b) What is multi port or point fuel injection system in regards with automobile Engine operation? [6]

OR

- Q4)** a) What are the advantages of electronic injection system? [6]
b) What are the types of solid state ignition systems? [2]

P.T.O.

- c) Explain principal of operation of solid state ignition systems principle of operation, [5]
- d) Electronic spark timing control system (steps involved). [3]

- Q5)** a) Explain following modes of engine control.
- i) Engine Cranking
 - ii) Engine Warm-up
 - iii) Open loop control
 - iv) Close loop [12]
- b) Write a short note on integrated engine control system with neat diagram?[6]

OR

- Q6)** a) Explain importance of exhaust gas emission control system and explain its operation? [10]
- b) What are the parameters to be considered for engine performance testing? [8]

SECTION - II

- Q7)** a) Explain the principle of Electronic Braking? [8]
- b) Explain automatic transmission electronic control circuit? [8]

OR

- Q8)** a) What is ESP? Explain its role and operation in brief? [8]
- b) What is ASR? Explain it in brief? [8]

- Q9)** a) What is instrumentation involved w.r.t automobile applications in
- i) Automotive central locking and [5]
 - ii) Anti theft system control technology [5]
- b) Instrumentation involved in electronically controlled doors and windows.[6]

OR

- Q10)** a) Explain the importance of an air bag technology in automobile? [6]
b) List out various components involved in auto body control technology? [3]
c) Explain in brief principle control circuit components and characteristics of any two of them in brief? [7]

- Q11)** a) Explain the role of Instrumentation in driver information system? [6]
b) Write a short note on automatic gearing control system? [6]
c) Write a short note on emission standards in automobile sector? [6]

OR

Q12) Explain in brief Ergonomics and safety aspect in automobile w.r.t following points [18]

- a) Lighting system components
b) Steering control techniques
c) Battery monitoring and control

