

Total No. of Questions : 12]

SEAT No. :

P2994

[Total No. of Pages : 3

B.E. (Mechanical Sandwich) (Semester - I)
AUTOMOBILE ENGINEERING
(2008 Pattern) (Elective - III)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) *Answers to the two sections should be written in separate answer books.*
- 2) *Answer any three questions from each section.*
- 3) *Neat diagrams must be drawn wherever necessary.*
- 4) *Figures to the right side indicate full marks.*
- 5) *Use of Calculator is allowed.*
- 6) *Assume suitable data if necessary.*

SECTION - I

- Q1)** a) Describe with neat sketch typical lay out of an automobile chassis and explain various parts of it. [8]
- b) Explain what do you understand by integrated body construction? State advantages and disadvantages of it. [8]

OR

- Q2)** a) Explain with neat sketch construction and working of multiplate clutch used in automobile. [8]
- b) What are various specifications need to be checked during purchase of new car? Compare technical specifications of two cars of your choice. [8]

OR

- Q3)** a) Explain necessity of gear box in automobile. [8]
- b) Describe construction and working of synchromesh gear box used in automobile. [8]
- Q4)** a) Explain role of final drive in automobile? Describe various types of it. [8]
- b) Explain the following [8]
- i) Epicyclic gear box.
 - ii) Propeller shaft.

P.T.O.

- Q5) a)** Describe with neat sketch construction and working of disc brake used in automobile. [10]
- b)** Describe with neat sketch the following. [8]
- i) Castor and Camber
 - ii) Toe-in and Toe-out

OR

- Q6)** Write short note on the following. (Any three) [18]
- a) Shock absorber
 - b) Tyre Construction
 - c) Suspension Springs
 - d) Layout of car air conditioning system
 - e) Tubeless tyre

SECTION - II

- Q7) a)** Explain with neat sketch a layout of an automobile service station. Show required sections in it. Explain role of each section in garage practice. [8]
- b)** Describe various steps involved during servicing of four-wheeler automobile. [8]

OR

- Q8) a)** What are purposes of the liners used in engine cylinder? Describe types of liners used in automobile engine. [8]
- b)** Explain in detail maintenance required for steering system in automobile. [8]
- Q9) a)** What do you understand by Active safety and Passive safety? Explain in detail role of safety in modern day automobiles. [8]
- b)** What do you understand by anthropometry? Explain human impact tolerance on ergonomic data of automobile. [8]

OR

- Q10) a)** Explain the following [8]
- i) Injury Thresholds
 - ii) Severity Index
- b)** Describe with neat sketch construction and working of AIR Bags used in automobile safety. [8]

Q11)a) Explain with suitable application, use of microprocessor in today's automobile. [10]

b) Explain with neat sketch construction and working of water pump used in engine cooling system. [8]

OR

Q12) Write short note on the following (Any three) [18]

- a) Sensors used on engines.
- b) Adaptive front lighting system.
- c) Speedometer.
- d) Engine Control unit
- e) Automobile seat.

