

Total No. of Questions : 10]

SEAT No. :

P3717

[Total No. of Pages : 2

[5461]-527

B.E. (Mechanical) (Semester - I)
AUTOMOBILE ENGINEERING (Elective - II)
(2015 Pattern)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right side indicate full marks.*
- 4) *Use of electronic pocket Calculator is allowed.*
- 5) *Assume Suitable data, if necessary.*

- Q1)** a) Draw a layout of automobile chassis and explain parts of it. [5]
b) Describe the current scenario and development in Indian auto industry. [5]

OR

- Q2)** a) Explain the purpose and requirement of Front axle beam. [5]
b) Describe the necessity of gear box in automobile. [5]

- Q3)** a) Explain construction of wheel. What are benefits to use alloy wheels, Explain. [5]
b) Explain the following concepts used in steering geometry. [5]
i) Toe in Toe out.
ii) Understeer and Over steer.

pOR

- Q4)** a) What are the functions and objectives of Suspension system? Explain. [5]
b) Explain construction and working of hydraulic Brake system. What are various parts of it? [5]

P.T.O.

Q5) a) Describe role of active safety and passive safety in automobile with suitable example. [8]

b) Describe in detail parameters responsible for vehicle performance. [8]

OR

Q6) Write short note on the following (Any Four) : [16]

a) Air bags.

b) Seat belt.

c) Power requirement for propulsion of vehicle.

d) NVH in automobile.

e) Stability of vehicle.

Q7) a) Explain with neat sketch principle and construction of lead-acid battery. [8]

b) Explain the working of electrical fuel pump. [8]

OR

Q8) a) Explain types of vehicle maintenance. [8]

b) What is a hybrid vehicle? Describe the layout of electric vehicle and explain various components of it. [8]

Q9) a) Describe various Tests on battery condition. [9]

b) What are the sensors and actuators used in automobiles? Describe the purpose of each. [9]

OR

Q10) Write short note on the following (any three) : [18]

a) Overhauling of automobile engine

b) Electric Horn

c) Maintenance of steering system

d) Role of Seat belt in vehicle safety.
