

Exam. Code: 0943  
Sub. Code: 6743

2123  
B.E. (Mechanical Engineering)  
Seventh Semester  
MEC-703: Automobile Engineering

Time allowed: 3 Hours

Max. Marks: 50

*NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit. Support your answers with neat diagrams as applicable.*

x-x-x

- I. Give only short answer limited to maximum two lines:
- Give relation between engine revolution and vehicle speed.
  - Differentiate between supercharger and turbocharger
  - How axial cushioning controls the engagement of clutch?
  - How the speed fluctuations in universal joint of the propeller shaft can be taken care of?
  - Define the role of helper springs
- (5x2)

UNIT - I

- II. Derive an expression to calculate the equivalent weight of the vehicle in motion including the inertia and other effects. Also find out the gear ratio for maximum acceleration. (10)
- III. a) Discuss the constructional features of a clutch plate. Explain the function of each of its components.  
b) Explain with sketch arrangement and working of multi-point fuel injection system used in SI engines. (2x5)
- IV. a) Explain with diagram working of automatic gear box used in automobiles and its advantages over manual gear boxes.  
b) Discuss the working and characteristics of torque converter. Where it is used and what are its advantages. (2x5)

UNIT - II

- V. Discuss with a neat sketch working of wishbone type front wheel independent suspension system. How it is better than rigid axle suspension system. (10)

P.T.O.

(2)

- VI. Explain Camber, Steering Axis Inclination and Castor angle made by front wheels and discuss their effect on steering characteristics of vehicle. (10)
- VII. a) What is antilock braking system? Discuss with sketch working of antilock braking system used in automobiles along with merits and application.  
b) Discuss with sketch different types of wheels used in automobiles. How wheels are designated? (2x5)

x-x-x