

Exam.Code:0943  
Sub. Code: 7066

1078  
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.*

x-x-x

- I. Give only short answer limited to maximum two lines:
- Clutch plate has \_\_\_\_\_ springs to provide smooth engagement.
  - Define traction and tractive effort
  - For climbing steeper gradient/high acceleration/large drawbar pull which gear is best suited
  - Write procedure to obtain higher gear in constant mesh gear box.
  - When maximum torque multiplication is given by a torque converter.
  - Write the combination that yields very-slow forward speed from the epicyclic gear train.
  - How the speed fluctuations in the universal joint of the propeller shaft can be taken care of?
  - Which rear live axle is preferred in light duty vehicles?
  - Define the role of helper springs
  - Explain tyre designation system. (10x1)

UNIT - I

- II. Draw the road performance curves of automobile with respect to road speed and explain acceleration, gradiability and drawbar pull (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 battery coil ignition system used in SI engines. (5,5)

P.T.O.

(2)

- IV. a) Explain with diagram working of constant mesh gear box used in automobiles and its advantages over sliding mesh gear box.
- b) Explain the necessity of a differential in an automobile. Discuss with sketch the operation of simple differential with its limitations. (5,5)

**UNIT – II**

- V. Discuss with a neat sketch working of interconnected suspension system. How it is better than conventional suspension system? (10)
- 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 do you mean by exhaust emission control? Discuss with sketch working of catalytic converter used in exhaust from automobiles.
- b) Draw comparison between drum and disc brakes. (5,5)

x-x-x