

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:
- a) Clutch plate has _____ springs to provide smooth engagement.
 - b) Define traction and tractive effort
 - c) For climbing steeper gradient/high acceleration/large drawbar pull which gear is best suited
 - d) Write procedure to obtain higher gear in constant mesh gear box.
 - e) When maximum torque multiplication is given by a torque converter.
 - f) Write the combination that yields very-slow forward speed from the epicyclic gear train.
 - g) How the speed fluctuations in the universal joint of the propeller shaft can be taken care of?
 - h) Which rear live axle is preferred in light duty vehicles?
 - i) Define the role of helper springs
 - j) 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.

Explain with a neat sketch working of interconnected suspension system. How it is better than conventional suspension system?

Explain Camber, Steering Axis Inclination and Castor angle made by front wheels and discuss their effect on steering characteristics of vehicle.

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What do you mean by exhaust emission control? Discuss with sketch working of catalytic converter used in exhaust from automobiles.

(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