Exam. Code: 0943 Sub. Code: 7066

1129

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

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt <u>five</u> questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.

x-x-x

- I. Give only short answer limited to maximum two lines:
 - a) List various loads on the frame
 - b) Write procedure to obtain lower gear in a constant mesh gear box.
 - c) How clutch plate absorbs undesirable torsional vibrations?
 - d) Which rear live axle is preferred in heavy duty vehicles?
 - e) Explain tyre designation system.

(5x2)

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) Explain with sketch working of single plate clutch and list its merits demerits and applications.
 - b) Explain with sketch arrangement and working of turbocharger used in automobiles. List the advantages and limitations of using it with 1C engine in automobile. (2x5)
- a) Explain with diagram working of constant mesh gear box used in automobiles and its advantages over sliding mesh gear box.
 - b) Discuss the working and characteristics of torque converter. Where it is used and what are its advantages. (2x5)

<u>UNIT – II</u>

- 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)
- VI. Explain Camber, Steering Axis Inclination and Castor angle made by front wheels and discuss their effect on steering characteristics of vehicle. (10)

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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)

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