



Printed Pages : 3

TME703

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 0402

Roll No.

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B.Tech

(SEM VII) ODD SEMESTER THEORY EXAMINATION 2009-10
AUTOMOBILE ENGINEERING

Time : 3 Hours]

[Total Marks : 100

- Note :** (1) Attempt all questions.
(2) All questions carry equal marks.

1 Attempt any two parts : 10×2

- (a) How will you classify the different types of Automobile ? Explain the working of four wheel drive vehicle used in practice.
- (b) What is necessity of synchromesh gear box in an automobile ? Explain the working of synchronizer used in a gear box with neat sketch.
- (c) How will you find the tractive effort required for moving a vehicle ?

For a passenger car travelling at a speed of 84.5 km/hr is accelerated up a gradient of 1 : 20. The gross vehicle weight is 1125 kg. It has frontal area $A = 1.85 \text{ m}^2$, Air resistance coefficient is 0.0017 and rolling resistance is 22.6 kg/ton at above engine speed. The vehicle



of centrifugal clutch.
of a fluid coupling. How
torque converter ?
works in an Automobile
in.
principle of differential
ies.
out the wheel alignment
tem ? Explain.
types of steering gears ?
on of one form of steering

10×2

ages of power brakes ?
pneumatic brake system.
f self energizing brake
orking of a self energizing
h.
he leaf spring suspension
ension system of front
omobile vehicle. Describe
ision system.

- (ii) Spark plugs
- (iv) Types of batteries used

- (c) Draw the 'diagram' of simple two pole shunt wound generator. Why a generator is equipped with a cutout, explain with neat sketch.

Attempt any **two** parts :

10×2

- (a) What is the need of lubrication system in an automobile ? Draw the line diagram for lubrication of a petrol engine used in vehicle.
- (b) What do you mean by service of an engine ? Explain the method of service for the piston of an I.C. engine, when the engine gives blue smoke.
- (c) What is need of over-hauling of an automobile engine ? Explain the nature of work done during over-hauling of an I.C. engine cured in a vehicle.