



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

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1

[Contd...

of an automobile 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  
 sion

- (iii) 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.